

EXHIBIT 16



The California Fires Coordination Group

A Report to the Secretary of Homeland Security

February 13, 2004




FEMA



FEMA

MEMORANDUM FOR THE SECRETARY

From: Michael D. Brown 
Under Secretary
Emergency Preparedness and Response

Date: February 13, 2004

Re: California Fires Coordination Group Report

I am pleased to present the following report from the interagency California Fires Coordination Group (CFCG). The CFCG successfully expedited disaster response and recovery operations among 13 Federal Agencies and the American Red Cross. In addition guidance was provided to member agencies' field components as they worked with their partners in State and local governments, tribal authorities, first responders, and voluntary organizations to bring over \$483 million in Federal assistance to the people of Southern California.

Through the CFCG, the joint Disaster Field Office (DFO) and its Multi-Agency Support Group (MASG), Federal agencies successfully coordinated efforts in partnership with State and local authorities to deliver timely aid to communities in need. Also, post-fire hazards were mitigated through watershed remediation efforts designed to reduce the risk of flash flooding, mudslides, and debris flows.

DHS-FEMA and its Federal, State, and local partners remain committed to actively facilitating dialogue among the diverse stakeholders in order to help Californians address their long-term recovery needs.

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Executive Summary

This report provides an overview of the shared success of Federal, State and local governments, as they worked with voluntary agencies to conduct joint response and recovery operations in the aftermath of the California Wildfires of 2003.

- Through an interlocking two-tiered system of working groups, the Washington-based California Fires Coordination Group (CFCG) and the field-level Multi-Agency Support Group (MASG) at the joint Disaster Field Office (DFO), DHS-FEMA and its Federal, State, and local partners successfully coordinated concurrent response and recovery operations.
- The CFCG and joint DFO succeeded in expediting over \$483 million in Federal response and recovery resources to the affected communities, businesses, and local governments. CFCG and MASG reduced further risks to lives and property through post-fire erosion control and watershed protection measures.
- DHS-FEMA and its Federal, State, and local partners will remain committed to actively facilitating dialogue among diverse stakeholders in order to help communities address their long-term recovery needs.

Beginning October 21, 2003, a series of wildfires swept through the wooded canyons and mountain communities of southern California. Scorching over 750,000 acres in Los Angeles, Riverside, San Bernardino, San Diego, and Ventura Counties, the California Wildfires of 2003 ranked among the largest disasters in the State's history. The fires claimed 24 lives, caused over 200 injuries, and left over 3,000 families homeless. Entire communities were reduced to ashes and faced the seemingly overwhelming task of rebuilding.

Federal agencies rushed to California's aid in the early hours of the fires, providing State and local authorities with desperately needed manpower and other vital resources to battle the blazes. On October 27, 2003, President George W. Bush declared a major disaster in southern California, authorizing the Department of Homeland Security's Federal Emergency Management Agency (DHS-FEMA) to coordinate Federal efforts to assist State, local, and tribal governments and to work with private and faith-based voluntary organizations to provide timely and compassionate aid to the people of California affected by these devastating wildfires.

The report opens with a brief discussion of wildland fires, followed by a review of the major events of the California Wildfires of 2003. Next, the report describes the formation of the CFCG, the joint DFO, and the MASG to coordinate and expedite aid to affected communities, in partnership with State and local authorities. Two sections follow detailing the accomplishments of joint coordination: the expedited delivery of disaster assistance and efforts to manage the increased post-fire risks of debris flows and flash flooding. The final section offers conclusions about successful Federal, State, and local coordination of emergency response and recovery operations, and the "best practices" exhibited in the aftermath of the California Wildfires of 2003.

Wildfires: an Overview

Fire is an essential component of healthy forest ecosystems, periodically clearing areas of brush, undergrowth, and dead trees, creating seedbeds for new growth. While many wildland fires are caused naturally by lightning strikes, they are far too often manmade as well, sparked by either accident or arson. Almost any day of the year, a wildland fire is burning somewhere in the United States. But as with flooding, wildland fires can pose a significant disaster risk to lives and property whenever patterns of land use and development find themselves in the path of nature.

Over the past century, conventional wisdom has held that fires should be aggressively controlled. During this period, land management policy has been shaped by constructive dialogue seeking to establish the best possible balance between economic development and environmental conservation. However, massive accumulations of dead vegetation, brush, and undergrowth have been identified by many forestry experts as posing an increased fire risk, particularly to communities near forested areas in what is commonly called the “wildland-urban interface.”

While efforts to reduce fire risks to populated areas through forest thinning and controlled burning are ongoing, the United States Department of Agriculture’s (USDA) U.S. Forest Service (USFS) estimates that over 190 million acres of Federal forests and rangelands — an area twice the size of California— are currently at risk for catastrophic wildfires.¹ While the President’s Healthy Forest Initiative offers promising approaches to controlling future risks through improved forestry management practices, the buildup of fuels in America’s forests ensures that wildland fires will remain a challenge to many communities across our nation.

A Coordinated Response: NIFC

Because wildland fires do not observe jurisdictional boundaries, firefighting, training, research, and outreach are coordinated among a wide variety of Federal, State, tribal, local, and other stakeholders. The National Interagency Fire Center (NIFC), headquartered in Boise, Idaho, is the nation’s management and logistical support center to meet the challenge of wildland fires.

NIFC is comprised of representatives from USFS, the Department of Commerce’s (DOC) National Weather Service (NWS), DHS-FEMA’s U.S. Fire Administration (USFA), the Department of the Interior’s (DOI) Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA), Fish and Wildlife Service (FWS), National Park Service (NPS), Office of Aircraft Services (OAS), and the National Association of State Foresters (NASF), and supports joint operations for managing wildland fire throughout the United States. In addition to responding to wildfires, NIFC can provide firefighting and other assistance to DHS-FEMA through the Federal Response Plan’s (FRP) Emergency Support Function (ESF) #4 — Firefighting.² NIFC also maintains mutual aid agreements with Canada, Australia, New Zealand, and Mexico through the U.S. State Department.

According to NIFC, 57,578 wilderness fires were identified in 2003, burning over three million acres, mostly in remote and sparsely populated areas of the American West. As remarkable as that sounds, 2003 was on the whole a slow year for wildfires. According to NIFC, an average of 97,000 wildfires have burned nearly 5 million acres annually each year in the past decade (see Table 1.1).

Table 1.1: Wildfire Activity in the United States, 1994-2003

YEAR	FIRES	ACRES
1994	114,049	4,724,014
1995	130,019	2,315,730
1996	115,025	6,701,390
1997	89,517	3,372,616
1998	81,043	2,329,709
1999	93,702	5,661,976
2000	122,827	8,422,237
2001	84,079	3,555,138
2002	88,458	7,182,979
2003	57,578	3,815,757

Source: NIFC. Figure for 2003 current as of November 7, 2003.

Fire control is an expensive proposition for managing agencies as well, exceeding \$1 billion on Federal lands in particularly active fire seasons (See Table 1.2). NIFC and its member agencies were active partners in joint response and recovery operations in the California Wildfires of 2003, where an estimated 40 percent of the burn areas were located on Federal lands, most notably in and around the Angeles, Cleveland, Los Padres, and San Bernardino National Forests.

Table 1.2: Federal Lands Suppression Costs for NIFC Member Agencies, 1994-2002

Year	BLM	BIA	FWS	NPS	USFS	Totals
1994	\$98,417,000	\$49,202,000	\$3,281,000	\$16,362,000	\$678,000,000	\$845,262,000
1995	\$56,600,000	\$36,219,000	\$1,675,000	\$21,256,000	\$224,300,000	\$340,050,000
1996	\$96,854,000	\$40,779,000	\$2,600	\$19,832,000	\$521,700,000	\$679,167,600
1997	\$62,470,000	\$30,916,000	\$2,000	\$6,844,000	\$155,768,000	\$256,000,000
1998	\$63,177,000	\$27,366,000	\$3,800,000	\$19,183,000	\$215,000,000	\$328,526,000
1999	\$85,724,000	\$42,183,000	\$4,500,000	\$30,061,000	\$361,000,000	\$523,468,000
2000	\$180,567,000	\$93,042,000	\$9,417,000	\$53,341,000	\$1,026,000,000	\$1,362,367,000
2001	\$192,115,00	\$63,200,000	\$7,160,000	\$48,092,000	\$607,233,000	\$917,800,000
2002	\$204,666,000	\$109,035,000	\$15,245,000	\$66,094,000	\$1,266,274,000	\$1,661,314,000

Source: NIFC

Responsibilities for mobilizing firefighting resources are organized at local, regional, and national levels. The vast majority of fires are controlled at the local level, where wildland fire is initially managed by the local agency that has fire protection responsibility for that area. Various local agencies may work together, sharing personnel and equipment through mutual aid and other types of cooperative agreements, to fight new fires and contain those that jump fire lines.

Wildland firefighting techniques differ significantly from those commonly employed by municipal fire departments to contain a structure fire. Firefighters carefully build and defend fire lines at strategic locations and deprive oncoming fires of fuel by conducting “back-burns,” or “back firing.” Incident commanders may deploy a range of firefighting resources as they work to slow and contain the inferno’s advance. In addition to fire engines and ground crews, specialist strike teams of “hot shots,” which build and defend fire lines, and “smokejumpers,” which are ferried into remote areas by air may join the suppression operation. Air power assets may also be used, such as helicopters and air tankers carrying water or fire retardant.

When a fire situation becomes severe, NIFC facilitates the coordination of a National Multi-Agency Coordination (NMAC) group to identify national or interagency issues, and to set priorities for the efficient allocation of resources. This coordination group consists of the NIFC directors and representatives from the General Services Administration (GSA), a military liaison, and/or State forestry officials, as appropriate. In all, NIFC member agencies provided over 2,800 firefighters to response operations during the California Wildfires of 2003.



A helicopter drops water on a fire in San Diego (OES)

If a wildland fire grows to the point where local personnel and equipment are insufficient to contain and/or control it, they may call upon the nearest of NIFC’s 11 Geographic Area Coordination Centers (GACC) for help. The GACC will locate and dispatch additional firefighters and support personnel, including incident management teams, engines, bulldozers, other aircraft, and supplies throughout the geographic area. If effective response is beyond the combined capabilities of local and GACC firefighters, NIFC may provide additional reinforcements by locating and mobilizing additional firefighting assets as needed.

DHS-FEMA and Wildland Fires

In addition to the role of USFA as an NIFC partner, DHS-FEMA has other programs that can be activated to supplement joint wildland firefighting efforts. In certain cases, States may qualify for further firefighting assistance under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act, P.L. 93-288, as amended, 42 U.S.C. §§ 5121-5206), the law that authorizes DHS-FEMA’s disaster preparedness, response, recovery, and mitigation programs.

While the Stafford Act does not permit DHS-FEMA to duplicate assistance readily available from other Federal programs, it can provide supplementary aid to State and local governments, as appropriate, through its Fire Management Assistance Grant Program (FMAGP). FMAGP provides financial assistance in the form of grants to State and local governments to help manage and control fires on public or private forest or grasslands that threaten to cause extensive losses to lives and property. Under an approved FMAGP declaration, DHS-FEMA may cover 75 percent of eligible State and local firefighting costs, such as expenses for field camps, equipment use, repair and replacement, tools, materials, and supplies. In addition, States may be reimbursed for

eligible mobilization and demobilization activities, as well as limited emergency work as authorized under Section 403 of the Stafford Act, Essential Assistance.

In extreme cases, when wildland fires have caused severe damages to private property and public infrastructure, a Governor may also request a major disaster declaration from the President through DHS-FEMA.³ Following the Governor's request, DHS-FEMA coordinates with State emergency managers to prepare a report to the President detailing the scope and magnitude of the damages on the ground and provide a recommendation.⁴ In cases such as the California Wildfires of 2003, where extensive damages to property and infrastructure are self-evident, and/or areas may be inaccessible, the damage assessment typically conducted by DHS-FEMA personnel is delayed until after the fires are contained in order to expedite assistance to area communities.

Once the President declares a major disaster, DHS-FEMA is authorized under the Stafford Act to provide assistance through its programs, as well as to coordinate with other Federal, State, local, and volunteer agencies to expedite aid to State and local authorities and affected area residents.⁵

A Tale of Two Fires: Colorado and Arizona

The 2002 fire season was particularly harsh for Colorado and Arizona, where drought-like weather, erratic winds, and accumulations of dead vegetation provided for ideal fire conditions. The severity and magnitude of the Hayman Fire in Colorado and the Rodeo-Chedeski Fire in Arizona were so great that the President declared major disasters in both States.

Beginning on April 23, of 2002, a series of wildfire incidents began to severely impact communities across Colorado. As joint firefighting efforts became overwhelmed, FEMA authorized 18 FMAGP declarations to aid the State. But as the fires continued to spread to nearly every part of the State, Governor Bill Owens requested a major disaster declaration as a result of the Hayman Fire, which was granted by President Bush on June 19, 2002. Within two months, over 2,000 Colorado residents applied for disaster assistance with FEMA, and over \$30 million in housing assistance, low-interest loans, crisis counseling, and other forms of Federal assistance was made available to 58 of the State's 63 counties, and two tribal governments.

Meanwhile in neighboring Arizona, over 30,000 residents evacuated as a result of the massive Rodeo-Chedeski Fire, one of 25 fires that burned in the State since April 2002. When the fires overwhelmed combined Federal, State, and local capabilities, FEMA provided two of the six FMAGP grants in Arizona to fight the blaze (Arizona received a total of six FMAGP declarations in 2002.) By the time the Rodeo-Chedeski Fire was contained, over 468,000 acres were burned and 450 homes were destroyed. On June 25, 2003, the President approved Governor Jane D. Hull's request for a major disaster declaration, making four counties and the Fort Apache tribal government potentially eligible for Federal disaster aid, which by August 2002 topped \$26 million.

Wildfire Dangers in California

As one commentator recently wrote, "They live on earthquake fault lines, on cliff tops, in the middle of dying forests, and far from any source of water...you might call it the California way of life."⁶ From the Sierra Nevadas to the Sonora Desert, and from the Tahoe Basin to the Malibu Hills, among the many hazards Californians face is a particularly complex fire environment, with a wide array of climates, fuels, and topographies, each presenting a host of unique challenges.

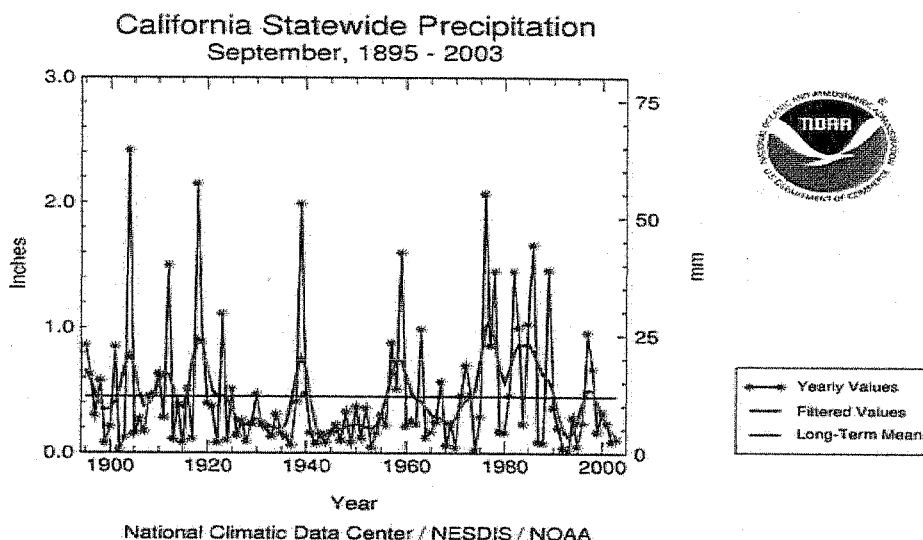
The danger of wildfires to California's communities is nothing new. In 1991, the Oakland Hills fires in northern California claimed 25 lives and destroyed nearly 3,200 homes at an insured cost of about \$1.7 billion.⁷ In 1993, two major fires in Laguna and Malibu destroyed 1,000 homes over 26 miles and caused over \$550 million in damages. Some experts have speculated that once all the damages from the California Wildfires of 2003 are tabulated (provisionally estimated at about \$1.7-\$3.5 billion), it may rival the costliest fire incident in California's history, which occurred following the 1906 San Francisco Earthquake, which caused \$5.7 billion in damages, in inflation-adjusted dollars.⁸

In California, the Department of Forestry and Fire Protection (CDF) works in cooperation with the Governor's Office of Emergency Services (OES), as well as neighboring State governments through a network of mutual aid agreements to fight wildland fires. CDF is also a dedicated firefighting partner to the Federal government, with experience contributing to firefighting efforts on the 45 million acres of Federal lands in the State.

CDF is the largest multipurpose fire protection agency in the United States, responsible for wildland fire protection of over 31 million acres of California's privately owned watershed lands, as well as 11 million acres under agreements with local governments. CDF responds to over 7,000 wildland vegetation fires on State responsibility areas each year. Approximately 95 percent of these fires are contained in less than 10 acres. CDF commands a force of approximately 3,800 full-time fire professionals, 1,400 seasonal personnel, and approximately 7,800 volunteers. In addition to its 1,027 fire engines, CDF maintains a significant fleet of aircraft that includes seventeen 800-gallon air tankers, one 3,000-gallon and two 2,000-gallon contract air tankers, 13 air attack planes, and 10 helicopters.⁹

Fire risk in southern California is determined by a number of factors, including drought, the availability and type of fuels, the Santa Ana Winds, and development in the wildland-urban interface. The area is characterized by a Mediterranean-style climate of hot, dry summers and mild wet winters. As with much of the West, the region has seen significantly below average rainfalls in recent years, leaving parched brush and trees extremely dry and fire prone.

Chart 1.3: California Precipitation, 1895-2003.



Source: NCDS/NOAA

The drought conditions have also made the weakened trees vulnerable to bark beetles, which bore into the surface of the wood, rapidly killing an otherwise healthy tree (see next page). Many brush plants in southern California's chaparral seed quickly; leaving dead vegetation that is rich in nutrients, which are released into the soil by burning. Indeed, some chaparral plants, such as *Ceanothus*, have leaves that are coated with flammable resins, while others, such as *Chamise* (greasewood), not only produce volatile gases when they burn, but also leave a water-resistant residue in the soil that prevents water absorption, which accelerates erosion on denuded slopes, increasing post-fire risks of flash flooding and mudslides in area communities.¹⁰

Vegetation that can fuel wildland fires in California grows lushly in the moist winters, only to be dried by the Santa Ana winds after the generally arid summer months. The Santa Ana winds blow from the inland deserts in northeast towards the Pacific Ocean. They often blow with exceptional speed below the passes and through canyons of southern California and in the Los Angeles basin. Commonly associated with bad fortune in local lore, the Santa Ana prove a most "ill wind" to firefighters trying to contain a wildland fire, and as in several of the blazes of the California Wildfires of 2003, can quickly transform a small brushfire into a raging firestorm.

Finally, the development of communities in the urban-wildland interface poses challenges for developing an effective and comprehensive fire management program. While local building codes have developed over time to encourage more fire-resistant construction, older buildings pose a challenge to local communities. Vegetation control is another issue, as well as the palm trees, eucalyptus, and other oily landscaping plants common in southern California, which can add fuel to a rapidly moving fire.

According to CDF, more than 7.2 million California homes are categorized in the three highest fire risk levels — more than 6 million of which are located in urban areas. Los Angeles County, with more than 734,000 homes at risk (22.5 percent of all the homes in the county), while San Diego County, has more than 619,000, or 59.5 percent. In all, the estimated 585,000 homes categorized in the highest risk level statewide pose a potential financial loss of at least \$106 billion, according to CDF projections.¹¹

The Bark Beetle

Several different species of beetles target drought-weakened trees in the United States, boring into the surface of the wood, where hatching offspring, disease, and fungi rapidly kill their otherwise healthy hosts. According to USFS, one million or more trees containing more than 1 billion board feet of timber may be killed each year during an outbreak of these “bark beetles.” Such extensive tree killing may increase wildland fire danger by adding to available fuels.

Since 1999, drought conditions in forested areas of southern California have weakened trees, exacerbating a bark beetle infestation that has killed up to 80 percent of the mature trees in the San Bernardino, San Jacinto, and Palomar Mountains. The removal of dead and dying trees is difficult and expensive, further complicated in California by the State’s limited timber industry.

Within the counties of Riverside, San Bernardino, and San Diego, bark beetles affect an estimated 400,000 acres of forestlands, 80 percent of which are located in The San Bernardino National Forest. USFS has statutory authority and responsibility for managing forests for the purpose of reducing fire threats on Federal lands and on certain non-Federal lands, and has committed more than \$1.1 million in staff time and redirected \$2.8 million in State Fire Assistance and Community Protection/Community Assistance funding for wildfire prevention and hazardous fuels reduction for communities in the San Bernardino National Forest area. In addition, the USDA’s National Resources Conservation Service (NRCS) has been working with State and local authorities and assisting with the removal of dead and dying trees, conducting portable milling operations, providing biomass sorting and transportation, and providing technical assistance under its Emergency Watershed Protection (EWP) program. Within its Stafford Act authorities, DHS-FEMA has played a supporting role in the Federal/ State partnership to address bark beetle infestations by working to redirect \$3.3 million in existing Hazard Mitigation Grant Program (HMGP) funds from previous disasters to address bark beetle concerns, as well.

The 2004 Congressional appropriations to USDA included \$225 million to USFS and NRCS to address hazardous fuels reduction. Additional aid may be forthcoming from the President’s Healthy Forests Initiative, which is jointly administered by USDA and the U.S. Department of the Interior. While several infested areas were spared from the California Wildfires of 2003, addressing the bark beetle will remain a long-term challenge for Federal, State and local authorities.



The Bark Beetle (USFS Photo)

Response to The California Wildfires of 2003

On October 21, 2003, wildfires broke out in the Reche Canyon area of Riverside County, outside Fontana in San Bernardino County, at Camp Pendleton, north of San Diego, and in the hills above Burbank in Los Angeles County. Helped along by unseasonably warm weather and the Santa Ana winds, the fires multiplied, rapidly burning thousands of acres, as Federal, State and local firefighters were deployed to fight the blazes. In all, 12 separate fires in 5 counties would eventually make up the California Wildfires of 2003, burning over 750,000 acres and destroying 3,631 homes, claiming 24 lives and causing 222 injuries.

Los Angeles County

The Padua Fire

The Padua Fire was an outgrowth of the massive Grand Prix Fire, which began on October 21, 2003, in neighboring San Bernardino County. It destroyed 59 homes and consumed 10,466 acres, mostly in the Angeles National Forest before being contained on November 5, 2003.

The Verdale Fire

The Verdale Fire started on October 24, 2003, in Los Angeles, threatening over 350 residences and 40 businesses in the towns of Val Verde and Piru, as well as major electrical transmission lines and an oil field in its path. On October 25, 2003, DHS-FEMA approved an FMAGP declaration to aid the 613 State and local firefighters deployed to stop its advance. A suspected arson, the Verdale Fire burned approximately 8,680 acres before being contained on October 29, 2003.

Riverside County

The Mountain Fire

The Mountain fire started around October 26, 2003, near Temecula. DHS-FEMA approved an FMAGP declaration on the first day, as the fire burned approximately 10,446 acres, destroying nearly 60 structures. Approximately 350 firefighters managed to contain the fire on October 30, 2003, at an estimated cost of \$1.2 million. The fire's cause is currently under investigation.

The Pass Fire

The Pass Fire started around 4 p.m. on October 21, 2003, in the Reche Canyon area, near Moreno Valley in Riverside County. Within hours, the swirling, swift-moving wall of flames threatened nearly a hundred homes, prompting many residents to evacuate the area. State and local fire investigators suspect arson as the cause.

That evening, DHS-FEMA approved an FMAGP declaration to support the efforts of 250 CDF and county firefighters deployed to the scene to battle the blaze, assisted by some area residents determined to save their homes. By the time the Pass Fire was contained on November 3, 2003, it blackened over 2,387 acres, destroying five homes and damaging three others. CDF estimated

total firefighting expenses for the Pass Fire at approximately \$1.7 million, but reported that their efforts may have saved as much as \$30 million in property.

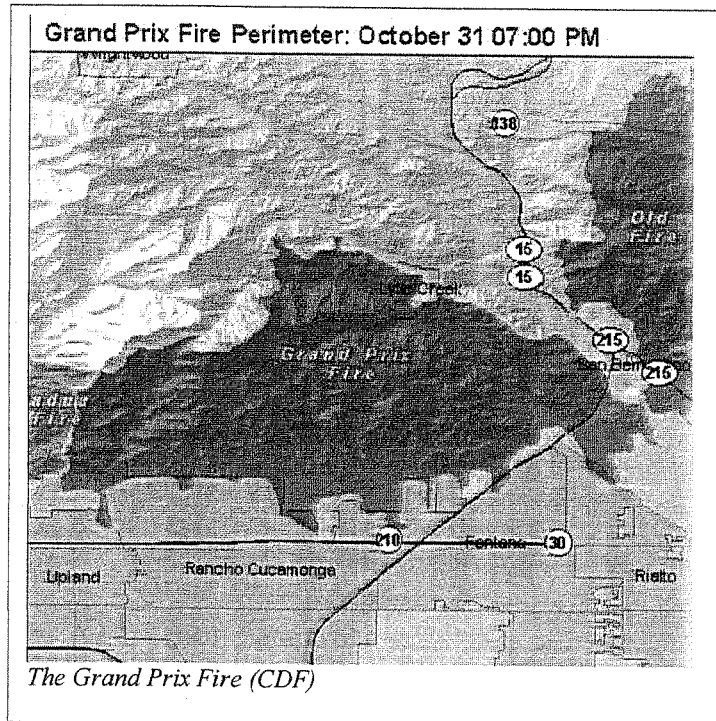
San Bernardino County

The Grand Prix Fire

Around 2 p.m. on October 21, 2003, a fire erupted in Coyote Canyon, near a construction site in the Hunter's Ridge neighborhood, just outside of Fontana, in San Bernardino County. Named after a street where it was first identified, the Grand Prix Fire consumed 2,500 acres in its first day. Federal and State fire investigators have concluded that the fire was probably accidental, caused by a spark from an off-road vehicle or discarded cigarette.

As the fire snaked into the San Bernardino National Forest, a USFS Incident Management Team took over command of firefighting operations, joining CDF and local firefighting personnel, hundreds of engines and aircraft, and four "hot-shot" crews from Oregon, Nevada, Virginia and the Navajo Nation. DHS-FEMA provided an FMAGP declaration for the Grand Prix Fire on October 23, 2003.

Driven by the Santa Ana Winds, the Grand Prix Fire met the Old Fire to the East, and the Padua Fire to the West by October 26, 2003, covering over 52,000 acres, destroying 60 homes, and prompting 5,000 residents to evacuate the area as the fire marched through Rancho Cucamonga, Upland, Claremont and La Verne. The Grand Prix Fire was fully contained on November 8, 2003, after charring approximately 60,000 acres, causing one death and 35 injuries, and destroying 135 homes.



The Old Fire

The Old Fire started on October 25, 2003, in San Bernardino. That day, DHS-FEMA provided an FMAGP declaration for the Old Fire. Fire investigators suspect arson as the cause.

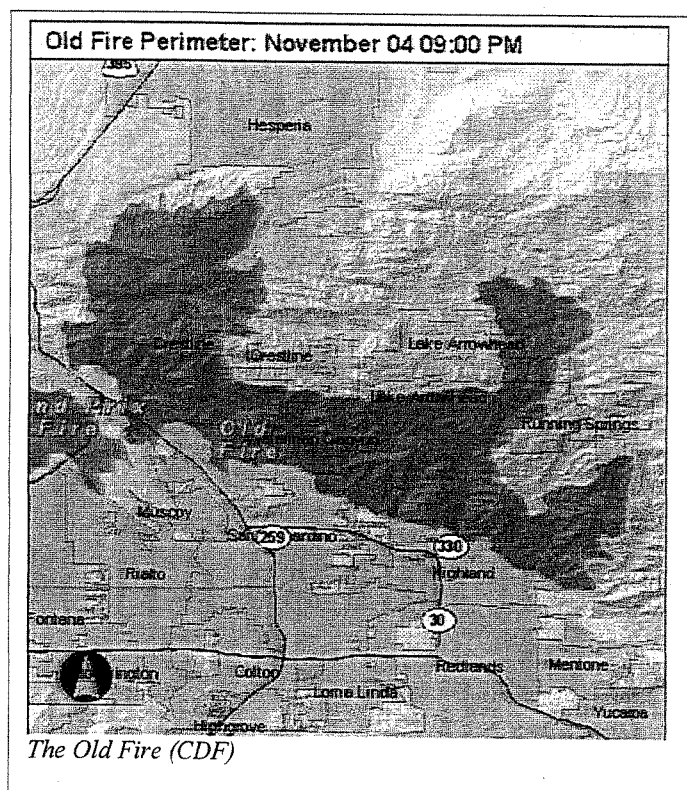
Within a day, the Old Fire burned in and around the San Bernardino National Forest, jumping the 215 Freeway near Devore to meet the Grand Prix Fire, creating a blackened, 60,000-acre band from Claremont to Running Springs.

Fire crews worked to stop the advance of the blaze as it continued to burn out of control. The fire threatened the communities of Crestline,

Lake Arrowhead, and Big Bear, as fire crews, joined by military personnel, dropped load after load of water from helicopters and converted military cargo planes and conducted back burning operations to eliminate fuels in the fire's path.

Prior to the fires, USFS worked closely with State and local agencies, organizing the Mountain Area Safety Taskforce (MAST) in the San Bernardino National Forest communities of Lake Arrowhead and Big Bear. The MAST convened community meetings, communicated the risk to the communities from fires, planned evacuation routes, and developed plans to mitigate the risk. As a result of this advance planning, when the fires began to threaten the mountain communities, evacuations, though challenging, were conducted in an effective and safe manner. USFS reports that MAST will continue to work to implement measures to mitigate future fires and the risk to their communities. Over 1,600 displaced residents were relocated to unused airport hangers at San Bernardino International Airport where the American Red Cross (ARC) operated a shelter.

The Old Fire was contained on November 6, 2003, after burning 91,281 acres, destroying 993 homes and 10 businesses, and was responsible for six deaths and 12 injuries. While Bark Beetle infestations have been a long-standing concern to many area residents, whose homes are located in and around national forestlands, it is important to note that most of the Grand Prix and Old Fires burned through chaparral in the foothills, and not the trees killed by bark beetles. Nevertheless, the removal of dead trees and brush in and around the 820,000-acre San Bernardino National Forest will remain a significant long-term concern.¹²



San Diego County

The Cedar Fire

The Cedar Fire, the largest and most destructive of the California wildfires, started on October 25, 2003, in San Diego County, reportedly by a lost hunter, who set a fire when lighting a signal flare.

In the early hours of October 26, 2003, the Cedar fire swept along the Wildcat Canyon area of San Diego County, disrupting electricity and killing 11 people, several in their vehicles as they attempted to evacuate the area. That day, DHS-FEMA approved an FMAGP declaration for the Cedar Fire.

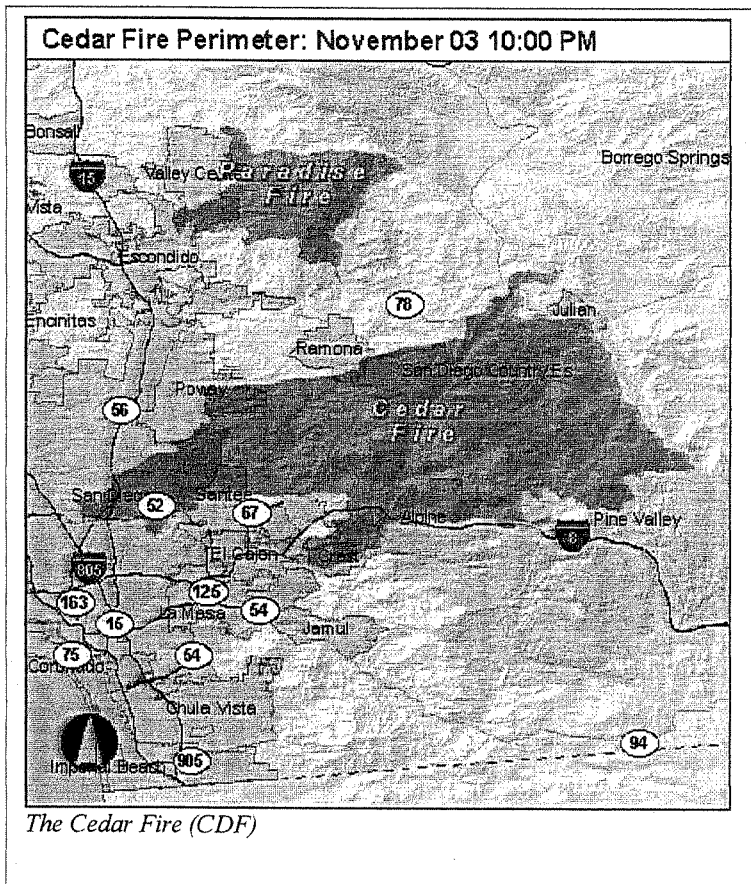
Within two days, the Cedar Fire grew to 115,000 acres, burning rapidly through the Cleveland National Forest to the east, as well as 25,000 acres within San Diego City limits to the west, destroying 150 homes in the Scripps Ranch neighborhood. Nationwide air traffic nationwide as well as local aerial firefighting efforts were disrupted when flames forced evacuation of a Federal Aviation Administration control center.

By the time it was contained on November 5, 2003, the Cedar Fire proved the costliest in terms of lives and property, burning 273,246 acres in the communities of Julian, Laguna, Scripps Ranch, and elsewhere. The fire caused 14 deaths and 113 injuries. It took a total of 1,478 personnel from USFS, CDF, and local fire departments to contain the fire, at an estimated cost of \$27 million. The Cedar Fire was the costliest in terms of residential property damages, destroying over 2,200 residences and 22 businesses.

The Paradise Fire

The Paradise fire started around October 26, 2003, on Rattlesnake Mountain north of Paradise Creek Lane on the Rincon Indian Reservation. The cause of the fire is under investigation, but is suspected to have been the result of either a campfire or arson. DHS-FEMA provided an FMAGP declaration for the Paradise Fire on October 26, 2004, as thousands of residents were evacuated, while 788 personnel from USFS, CDF, the California Department of Fish and Game, and local fire districts battled the blaze.

The Paradise Fire quickly swept the southern perimeter of the Cleveland National Forest, from Valley Central to Escondido, only a few miles north of the Cedar Fire. By the time it was fully



contained on November 6, 2003, it had burned 56,000 acres and destroyed 221 residences, causing two deaths and 24 injuries.

The Otay Fire

Also known as the Mine Fire, the Otay Fire started on October 26, 2003, in San Diego County. The fire burned approximately 46,291 acres, briefly skirting the border into Tijuana, Mexico. It was contained by October 28, 2003, by CDF and local fire crews after destroying one home and causing one injury. The fire's cause remains under investigation.

The Roblar 2 Fire

The Roblar 2 Fire started at the Camp Pendleton Marine Corps Base, south of the Cleveland National Forest, on October 21, 2003. The Fire was contained by October 29, 2003, after burning nearly 7,000 acres. The cause remains under investigation.

Ventura County

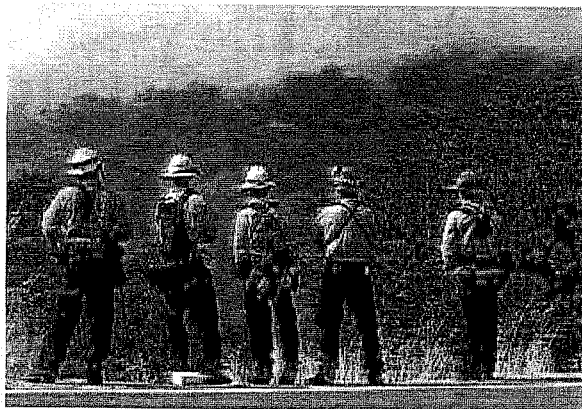
The Piru Fire

The Piru Fire started on October 23, 2003, and burned in and around the Los Padres National Forest. Because the Piru Fire threatened the same communities as the nearby Verdale Fire in Los Angeles, DHS-FEMA allowed costs from both fires to be consolidated into a single FMAGP declaration. Approximately 1,400 firefighting personnel managed to contain the 63,991-acre fire in rough and inaccessible terrain between Lake Piru and northwest Fillmore, but not before it destroyed three homes and injured 20 people. The cause of the fire is still under investigation, but arson is suspected.

The Simi Fire

The Simi Fire started around October 25, 2003, in the area of Simi Valley and Moorpark. Pushed by Santa Ana Winds, the Simi Fire initially advanced at a rate of 20 miles per day as CDF and county fire crews labored to block its path. The following day, DHS-FEMA approved a FMAGP declaration for the Simi Fire.

As the fire advanced, authorities feared that blowing embers would spread the fire to Thousand Oaks or Camarillo, or could even cross into Los Angeles on a "march to the sea." Weather conditions improved and firefighters managed to gain ground on what one firefighter called, "an unstoppable hurricane of fire."¹³ The Simi Fire was contained on November 1, 2003, after burning 108,204 acres, destroying 37 homes and causing 21 injuries. Its cause is under investigation.



USFS firefighters plan their next move (AP Photo)

Federal Response

NIFC provided \$ 7.5 million in supplies and critical support to firefighting forces on the ground, including 245 Engines and 6 Type 1 Incident Management Teams. NIFC member agencies made substantial contributions to State and local firefighting response operations, including:

- Six Federally sponsored National Interagency Incident Management Teams were mobilized to coordinate firefighting efforts.
- Federal wildland fire agencies provided 77 Fire Crews, 19 Air Tankers (16 of which were mobilized through reactivation of contracts which had ended for the season.), and 36 helicopters provided by DOI through NIFC, as reported by the Office of Wildland Fires Coordination.
- NIFC also provided support staff, such as 1,051 Overhead personnel, 12 Caterers, and 22 Shower Units, as well as communications gear, including 1,661 handheld radios and 30 repeaters/links contributed through DOI.
- BLM responded with all available resource ordered for the suppression effort and supplied BLM Liaisons to all fires that had an impact on BLM administered lands. BLM's Emergency Operations Expenditures are estimated at \$2,349,787.
- FWS conducted Wildland-Urban Interface (WUI) fuels reduction work before the fires in San Diego that protected homes and assisted in containment of the Otay Fire. Anticipating the potential impact of the Santa Ana winds, FWS pre-positioned its engines, crews and fire overhead from southern Oregon and northern California Refuges to its southern California Refuges. These fire resources were instrumental in protecting both wildlife refuges and private properties. FWS estimates its emergency operations expenses at \$264,888.
- While none of the large fires directly affected National Park Service (NPS) areas in California, they contributed a significant percentage of our available firefighting resources towards containment efforts.

By October 25, 2003, DHS-FEMA issued eight FMAGP declarations to support joint Federal, State, and local firefighting efforts. But the fires continued to spread, causing widespread destruction, while new fires were identified across the region. Meanwhile, Governor Gray Davis directed the execution of the State Emergency Plan and declared a State of Emergency for San Bernardino and Ventura Counties, followed by a declaration of a State of Emergency for San Diego and Los Angeles Counties the following day. CDF deployed 209 engines, 173 crews and close to 3,000 personnel assigned to fight the wildfires, while OES committed 545 local government engines and 101 OES engines, 2 water tenders, and one support unit to these fires.

ARC opened 24 evacuation centers in cooperation with local officials, assisting thousands who evacuated the burn areas. The Southern California Voluntary Organizations Active in Disasters (VOAD), an umbrella group comprised of leading national and local nonprofit and faith-based organizations including ARC, the Salvation Army, and others also assisted State and local governments in providing food, shelter, and other essential services to fire victims in Los Angeles, Riverside, San Bernardino, San Diego, and Ventura Counties.

By October 26, 2003, 11 lives were lost, 500 homes destroyed and 30,000 others were threatened. Thousands were ordered to evacuate as firefighters battled the wildfires that had consumed more than 200,000 acres. DHS-FEMA's Region IX office in Oakland, California, activated its Regional Operations Center (ROC) at Level III to work in close coordination with the California OES Fire and Rescue Branch to monitor fire activity and start planning response and recovery efforts.

On October 27, 2003, within hours of Governor Gray Davis's request, the President declared a major disaster for the State of California (FEMA-1498-DR). The President's disaster declaration designated Los Angeles, San Bernardino, San Diego, and Ventura Counties, with the subsequent addition of Riverside County for Federal disaster assistance. "This is a devastating fire, and it's a dangerous fire. We're prepared to help in any way we can," the President told reporters as he sent DHS Under Secretary for Emergency Preparedness and Response Michael D. Brown to California to assess the situation and coordinate DHS-FEMA operations.¹⁴ DHS-FEMA placed the National Emergency Response Team (ERT-N) White on alert, and field staff pre-positioned resources that would be needed for recovery operations.¹⁵

With the President's major disaster declaration, the Federal Response Plan (FRP) was also fully activated to bring to bear a fully coordinated response from its member agencies in order to expedite aid to California.¹⁶ Coordinated by DHS-FEMA, The FRP is a signed agreement among 27 Federal departments and agencies, including the American Red Cross that provides the mechanism for coordinating joint delivery of Federal assistance and resources to augment efforts of State and local governments overwhelmed by a major disaster or emergency through a series of agency-task Emergency Support Functions (ESFs).

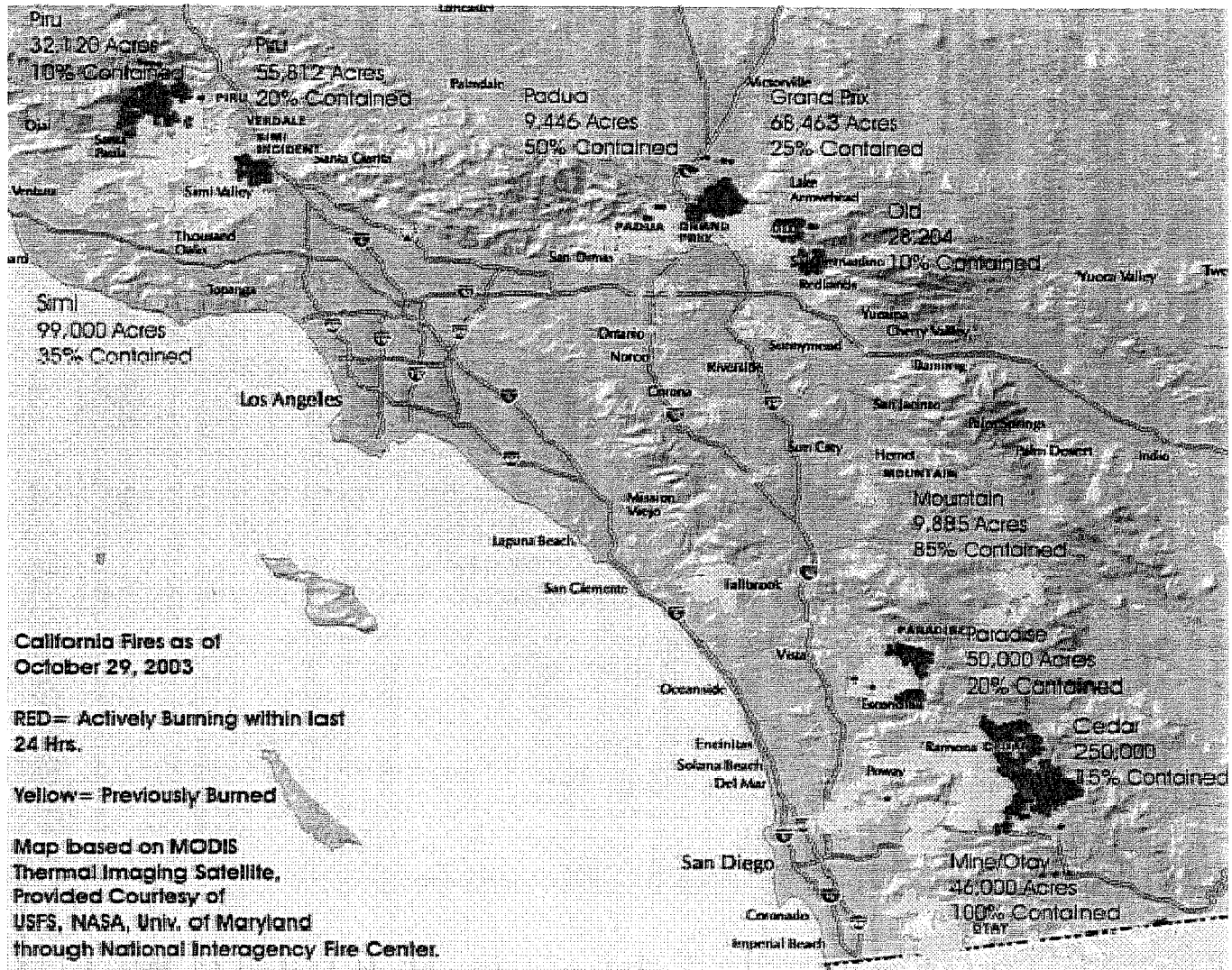
Table 3.1: The Federal Response Plan's Emergency Support Functions.

ESF Number	Function	Primary Agency
1	Transportation	DOT
2	Communications	DHS-FEMA
3	Public Works and Engineering	DOD (USACE)
4	Firefighting	USDA (USFS)
5	Information and Planning	DHS-FEMA
6	Mass Care	ARC
7	Resource Support	GSA
8	Health and Medical Services	HHS
9	Urban Search and Rescue	DHS-FEMA
10	Hazardous Materials	EPA
11	Food	USDA
12	Energy	DOE

Source: DHS-FEMA

California State Fires 10/29/03

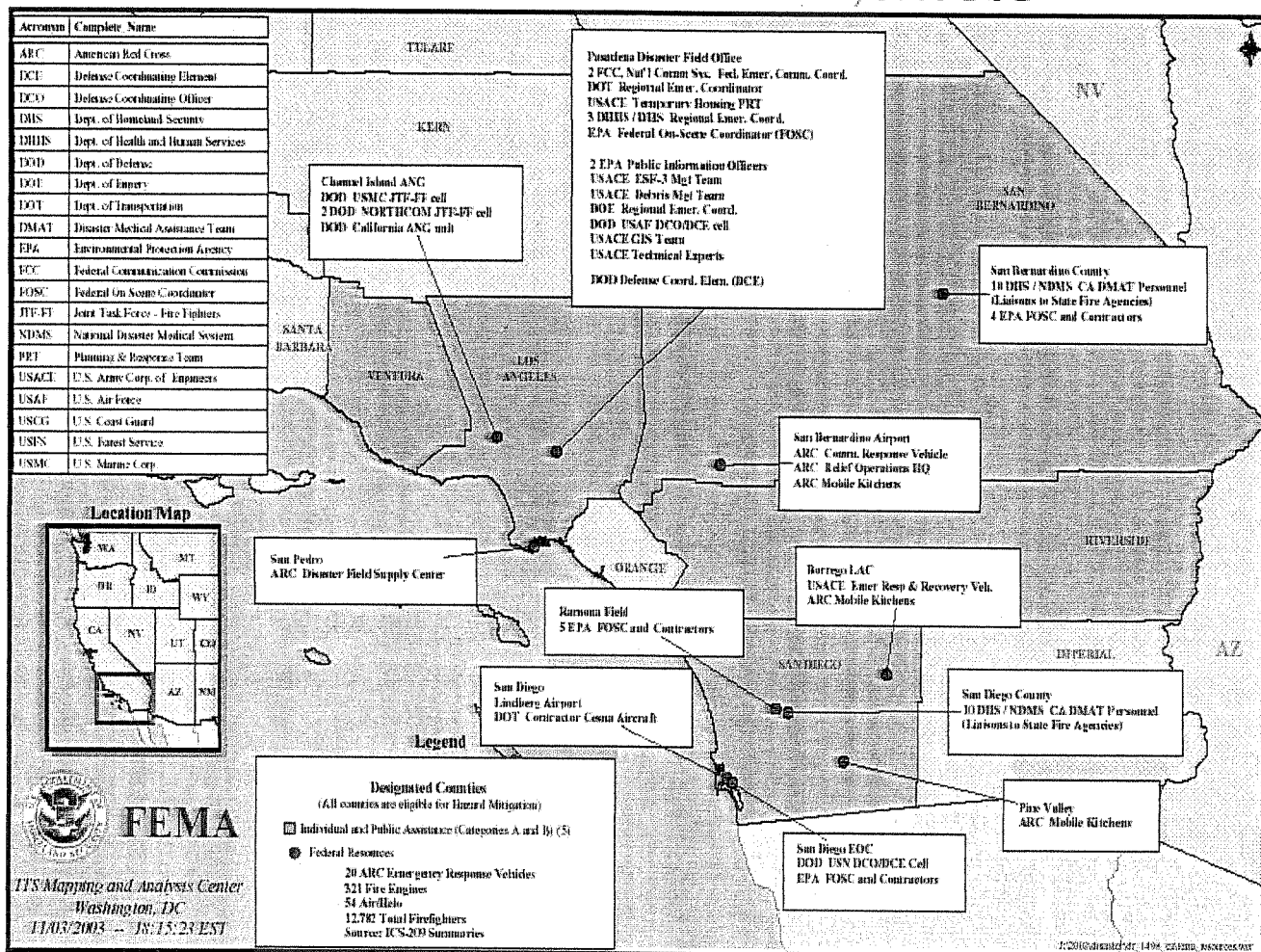
Southern California Fires



Overview of the California Wildfires (NIFC, DHS-FEMA)

With the activation of the FRP, the National Emergency Operations Center was augmented with additional Information and Planning personnel beginning October 29, 2003, to support field operations, with representatives from the U.S. Army Corps of Engineers Emergency Support Center (ESF #3—Public Works and Engineering), USFS (ESF #4—Firefighting), ARC (ESF #6—Mass Care), as well as an Operations Chief and a Mission Assignment Coordinator (see Table 3.1). All ESFs, except USDA's mass feeding component (ESF #11) and Urban Search and Rescue (ESF #9) were deployed to DHS-FEMA's joint Disaster Field Office (DFO), which was established in Pasadena, with satellite operating facilities in San Bernardino and San Diego, as well as a resources staging area at nearby March Air Force Base.

FEMA - 1498 - DR - CA, Designated Counties Federal Resources As of 11/03/2003, 1000 PST



Federal Response and Recovery Resources (DHS-FEMA)

By November 15, 2003, all fires were contained as improved weather conditions aided the monumental joint firefighting efforts of Federal, State, and local crews. In all, over 15,000 firefighters and 17,000 fire trucks had been mobilized by intergovernmental and interagency efforts. While many fire units were demobilized as fire activity began to dissipate, several continued to identify and extinguish "hot spots" in remote and sparsely populated areas into early December.

In all, approximately 750,000 acres – over 1,100 square miles – burned in the California Wildfires of 2003. Twenty-four deaths and 217 injuries were attributed to the event.¹⁷

Some of the casualties were among residents who were caught in the fires as they attempted to evacuate, many others were among the firefighters who worked tirelessly to safeguard threatened lives and property. Over 15,000 structures were affected, including approximately 3,600 homes that were completely destroyed. An estimated 40 percent of the burn areas were located on Federal lands, in the Angeles, Cleveland, Los Padres, and San Bernardino National Forests. The fires left over 350,000 cubic yards of debris and ash, which would cost millions to remove. Experts provisionally estimated insured losses between \$1.7-\$3.5 billion, placing them among the costliest fires in American history.



President Bush, flanked by Governor Gray Davis (right) and Governor-Elect Arnold Schwarzenegger (left) addresses firefighters in El Cajon, California. (AP Photo)

As response operations began to wind down, Federal and State agencies, local and tribal authorities, and the dedicated volunteers of national and local voluntary and faith-based organizations began to assess damages, coordinate joint recovery operations, and expedite the delivery of aid to devastated communities.

Recovery from the California Wildfires

As the smoke began to clear, authorities and area residents began taking stock of the damages. The State of California is widely recognized as a national leader in emergency preparedness, whose highly developed public safety infrastructure is capable of responding to and recovering from a host of natural and manmade hazards. But with 1,100 miles burned – an area larger than the State of Rhode Island – and thousands of homes destroyed, the magnitude of the devastation was beyond the capabilities of State and local governments, which faced not only the short-term emergency needs of thousands, but also the more long-term risks of flooding and mudslides in communities in the shadows of the hillsides and canyons scoured clean of vegetation by the fires. Joint recovery operations were coordinated through the Washington-based California Fires Coordination Group (CFCG) and the joint Disaster Field Office (DFO) in Pasadena, with its field-level Multi-Agency Support Group (MASG).

On October 27, 2003, just over a month after Hurricane Isabel made landfall, bringing flooding and destruction to communities in six States along the eastern seaboard, DHS Under Secretary for Emergency Preparedness and Response Michael D. Brown was now on his way to the West Coast to survey the fire damages first-hand. “We flew in at about 6:30 (p.m.) and as we flew in you could see the fires all along the ridges,” Under Secretary Brown told *NBC News*, “it was amazing to me how huge the flames were even at 10,000 feet. And then you get on the ground and you see that much like in a tornado wreck area that you have sporadic damage, you have homes totally destroyed then you get just across the street and the homes are totally intact. The devastation is just unbelievable.”¹⁸

Under Secretary Brown visited several affected communities and congratulated the Federal, State, and local firefighters, whose monumental joint efforts were bringing the fire under control. Under Secretary Brown’s praise would be joined by the President and DHS Secretary Tom Ridge, who would also visit the devastated communities in the following weeks. As the Under Secretary was briefed on the progress of response operations, it was clear that an equally integrated and robust partnership among Federal, State, local, and tribal governments, as well as private voluntary and faith-based organizations, would be needed to assist individuals and communities in recovering from the California Wildfires of 2003.

An “All-Hazards” Approach to Emergency Management

State and local governments have the primary responsibility for responding to disasters and emergencies. Indeed, the vast majority of incidents are addressed through State and local “first responders” – the dedicated firefighters, police, paramedics, and others on the front lines of emergency preparedness and response. So too are most of homeowners and businesses



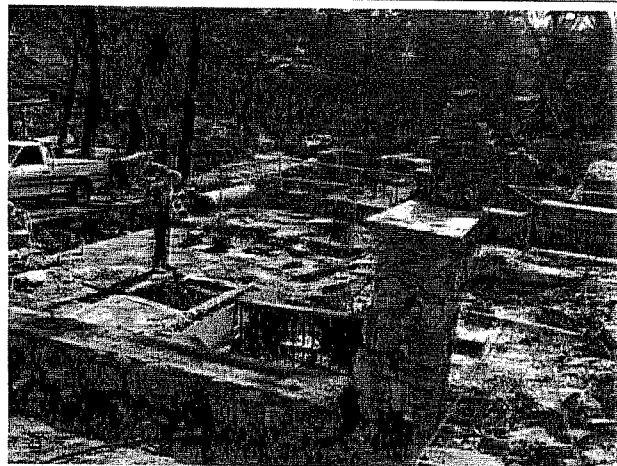
Under Secretary Brown (left) and FCO Bill Carwile (right) meet with DFO Staff in Pasadena (DHS-FEMA)

disaster-related property damages addressed by private insurers. Unmet needs are often addressed through the compassionate efforts of voluntary agencies. However, when effective response exceeds these combined State, local, and private resources, supplementary assistance may be available through DHS-FEMA and a host of other Federal agencies.

As coordinators of the President's emergency preparedness, disaster response and recovery, and hazard mitigation programs, DHS-FEMA employs an "all-hazards" approach to incident management. A cornerstone of DHS-FEMA operations, the "all-hazards" approach holds that certain techniques and practices are integral to effectively meet the challenges of any type of natural or manmade disaster. Perhaps the most important of these practices is a robust partnership among experts across a wide variety of disciplines and at all levels of Federal, State, and local government, as well as the private nonprofit sector.

Federal Partnership: The Joint DFO

DHS-FEMA's wide range of assistance programs is only a part of the larger mosaic of integrated Federal, State, and local disaster recovery programs. In every disaster, DHS-FEMA appoints a Federal Coordinating Officer (FCO), who works with the Governor's representatives in the State's emergency management agency and local governments. Depending on the nature of the incident, the FCO's team at a joint Disaster Field Office (DFO) might include representatives from numerous Federal agencies, such as:



A debris specialist from the USACE assesses needs in San Bernardino County following the fires in the area. (DHS-FEMA)

- The U.S. Army Corps of Engineers (USACE), which provides technical assistance to DHS-FEMA in developing recovery projects in partnership with State, and local governments. In the aftermath of a wildfire incident, USACE can assist State and local governments to address debris flow and flooding that may occur in the burned watersheds.
- USDA, whose USFS, NRCS, as well as its Farm Service Agency (FSA), Rural Development (RD), and other entities address several major disaster issues related to emergency food distribution, disaster-related crop and livestock losses, damages in rural communities, and Federal lands under its jurisdiction, such as national forestlands. After wildfires, NRCS can play a particularly important role in providing assistance with emergency protective measures necessary to protect life and property on private lands located in burned watersheds.
- The U.S. Department of Commerce (DOC), which can provide assistance to businesses and industries affected by a disaster. DOC's National Oceanic and Atmospheric Administration (NOAA) also provides meteorological expertise through its National Weather Service (NWS).

- The U.S. Department of Education (ED), which may be consulted when schools or universities have been damaged.
- The U.S. Department of Health and Human Services (HHS), which can work with State and local governments in addressing post-disaster public health issues and impacts on children, the elderly, low-income families, and other particularly vulnerable communities.
- The U.S. Department of Housing and Urban Development (HUD), which can assist with disaster-related housing issues, as well as aid State and local governments in rebuilding through its Community Development Block Grants (CDBG).
- The U.S. Department of the Interior (DOI), when disaster damages have an impact on Native American tribal governments and/or Federal lands under its administration. DOI's U.S. Geological Survey (USGS) can bring scientific expertise and technical assistance in identifying disaster-related hazards.
- The U.S. Department of Labor (DOL), which can work with State and local governments to assist with disaster-related unemployment issues and other programs.
- The U.S. Department of Transportation (DOT), which can provide technical assistance in identifying disaster related issues related to public infrastructure, as well as fund repairs to roads and bridges that are part of the Federal-Aid System.
- The U.S. Department of the Treasury, which can provide experts to assist with disaster related economic and tax issues.
- The Environmental Protection Agency (EPA), which can provide technical assistance in identifying and assessing any disaster related hazardous waste or pollution threats to responders.
- The General Services Administration (GSA), which provides key logistical support through provisioning supplies and facilities to Federal agencies' field personnel.
- The Office of Personnel Management (OPM), which may provide support with human resources issues to Federal agencies on the ground.
- The U.S. Small Business Administration (SBA), whose low-interest disaster assistance loan programs comprise the largest single source of Federal disaster aid to eligible homeowners and businesses.



A burned pickup truck and stone foundation are all that remain of a home in Waterman Canyon. (DHS-FEMA)

All of these agencies have played a significant role in ongoing recovery operations, working in close partnership with the administrations of former Governor Gray Davis and Governor Arnold Schwarzenegger, State agencies such as OES and CDF and the affected county, municipal, and tribal authorities, as well as the dedicated volunteers of national and local voluntary agencies to deliver over \$483 million in Federal response and recovery assistance to California.

Coordination and Integration

The unique characteristics of certain large-scale events, such as the 9/11 Terrorist Attacks of 2001, the Northridge Earthquake of 1994, the Midwest Floods of 1993, or Hurricane Andrew in 1992 require particularly great attention to inter- and intra- agency coordination to ensure optimal recovery results. In the case of California, an estimated 40 percent of the burn areas were located on Federal lands, in the Angeles, Cleveland, Los Padres, and San Bernardino National Forests. In addition to these lands, which are administered by USFS, lands serviced by DOI and its BLM and BIA were also affected. Several Native American reservations were affected by the fires, as were rural and urban communities with a host of programs administered by USDA, DOI, DOT, HHS, and HUD, among other Federal agencies.

Every Federally-declared major disaster and emergency managed by a DHS-FEMA FCO features elements of “horizontal” coordination among Federal, State, and local authorities, as well as “vertical” integration among agencies within each authority. Each member of the response and recovery team can contribute vital expertise that can be utilized in a system that can be scaled to promote expeditious, efficient, and effective response and recovery operations for all types and sizes of incidents.

To meet the operational challenges of horizontal coordination and vertical integration of operation in the aftermath of the California Wildfires of 2003, a pair of interlocking interagency workgroups— the California Fires Coordination Group (CFCG) and the joint DFO, with its Multi-Agency Support Group (MASG) – were organized to accomplish two basic missions:

- Maximize the expedited delivery of all available Federal assistance programs through the joint DFO in partnership with State, local, and tribal governments and coordination with voluntary agencies.
- Minimize the impact of the post-fire hazards of mudslides and flash flooding through a comprehensive and integrated watershed remediation and erosion control effort in partnership with State and local governments.

California Fires Coordination Group (CFCG)

Based in Washington, DC, CFCG was created as an interagency coordination group comprised of principals from USDA, DOC, HHS, DOI, DOL, DOT, Treasury, EPA, GSA, HUD, OPM, ED, SBA, and representatives from ARC. Chaired by DHS Under Secretary Brown, CFCG conducted a weekly teleconference with the MASG, a parallel interagency coordination group in the field based at the joint DFO in Pasadena.

In the initial phases of the recovery operations, CFCG addressed policy and resource issues flowing from the disaster area and provide guidance for coordinated program execution to each agency’s field components. “The weekly CFCG calls were very similar to the weekly conference calls following the 9/11 disaster,” observed Michael Pappas, SBA’s Associate Administrator for Field Operations, “These calls proved to be an extremely invaluable resource

in pooling the Federal government's resources to better serve those in need." USDA representatives, who have extensive experience in effectively integrating their own diverse programs with State and local stakeholders concurred, noting that, "(CFCG) helped coordinate activities among those agencies involved and which allowed for greater efficiency and use of resources. The information shared at the meetings was useful in determining the extent of damage in the fire areas as well as coordinating responses to Government officials." As recovery operations proceeded, the CFCG's regular meetings were adjourned, but can be reconvened at short notice, if needed.

Multi-Agency Support Group (MASG)

With the President's major disaster declaration, DHS-FEMA established a joint DFO to coordinate overall management of recovery operations and aid programs among key stakeholders. The MASG was formed as an extension of the joint DFO to focus primarily upon the increased threat of debris flows and flooding in key watershed areas as a result of the fires. MASG provides an additional forum for interagency information exchange and coordination within the joint DFO framework, allowing issues to be identified and expeditiously resolved using local knowledge and expertise wherever possible. The MASG meets regularly to assess area needs and available resources related to watershed remediation, and to identify any limiting factors that require policy guidance from CFCG.

While interagency taskforces are a staple of joint DFO activities, the MASG is unique in its specialization. Chaired jointly by the DHS-FEMA FCO and his State-level counterpart from the Governor's Office of Emergency Services (OES), the MASG provides coordination among a wide array of stakeholders from Federal, State, and local governments, who are working together to meet the short-term and long-term challenges of flooding and debris flows in the burn areas. In addition to DHS-FEMA and USACE, Federal MASG participants included representatives from three agencies active in watershed reclamation through their Burned Area Emergency Response (BAER) Teams, NRCS, USFS, and USGS. State participants included OES and the Department of Water Resources (DWR), while representatives from county governments also participated in MASG meetings.

The MASG has also played a key facilitating role in planning for the response to any potential post-fire flooding events. The increased threat from these events encouraged discussions among DHS-FEMA, the USACE, and State agencies such as the OES and DWR regarding the authorities and abilities of these agencies to respond. Through the MASG, DWR organized coordination among these participating agencies and county flood control districts to ensure that procedures for response and requesting assistance were communicated. These efforts contributed to the rapid response of Federal and State agencies to flooding and debris flows resulting from the Christmas Day storm.

The complimentary nature of CFCG and the MASG-joint DFO operations succeeded in promoting optimal levels of both horizontal coordination and vertical integration. The CFCG focused executive-level attention on recovery issues, allowing for vertical integration among Federal agency senior management, which came to the table with the expertise to identify synergies in respective programs as well as the authority to resolve any issues that arose among participating Federal agencies that could not be resolved at the MASG level. The MASG and joint DFOs were more wide-ranging and inclusive bodies that provide State, local, and volunteer organizations with forums to explore both horizontal coordination and vertical integration at each phase of disaster recovery operations.

The success of joint coordination of recovery operations to date in southern California offers a counterexample to critics who have raised concerns about effective coordination among Federal, State, and local emergency managers in the age of Homeland Security. While these critics observe operations bedeviled by the bureaucratic “stove piping” of useful information within agencies and offices rather than effective sharing of data across organizational boundaries, Federal, State, and local government’s shared success to date in delivering disaster assistance to affected communities and addressing post-fire risks have clearly demonstrated that these real challenges can be met and surmounted.

While the CFCG component may not be practical for every type of major disaster or emergency incident, the bottom-up nature in the CFCG-MASG dynamic makes the MASG and joint DFO key elements in disaster response, recovery, and mitigation operations. As the following chapters will show, the skilled management of joint operations have successfully utilized shared expertise on the ground in California to identify and resolve a host of disaster-specific issues as expeditiously as possible.

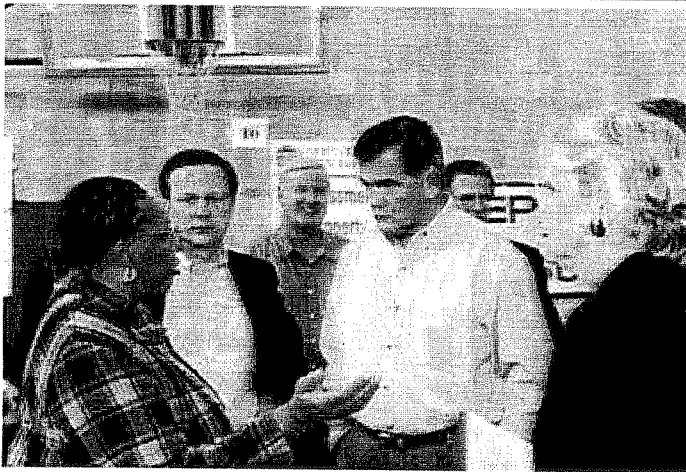
Delivery of Aid Programs

Stretching over 1,100 square miles, the California Wildfires of 2003 blazed from remote national parklands to the outskirts of two of America's largest cities, Los Angeles and San Diego. The fires touched a diverse array of communities – from affluent subdivisions to low-income neighborhoods, and from rural mountain communities to tribal reservation lands. Through CFCG and the joint Disaster Field Office (DFO), Federal, State, local and tribal governments successfully met their goals in delivering aid programs to meet the wide range of needs faced by southern California's vibrant and diverse communities in the aftermath of the wildfires of 2003.

With the President's major disaster declaration, DHS-FEMA's national teleregistration centers were activated, allowing residents of the disaster-designated counties to call its toll-free number, to register for disaster assistance from DHS-FEMA, as well as receive referrals to programs offered by other Federal, State, local, and voluntary agencies. When the registration period for fire damages closed on January 9, 2004, a total of 38,296 applications were received. However, additional applications for home damages caused by post-fire flooding and mudslides are being evaluated on a case-by-case basis. As of February 10, 2004, a total of 40,657 applicants have registered for disaster assistance.

Meanwhile at the joint DFO, DHS-FEMA staff worked with the California OES and local authorities to open 10 Local Area Centers (LACs) located throughout the designated counties. LAC locations provided area residents with "one-stop recovery shops," where they could meet face-to-face with representatives from several MASG member agencies, including DHS-FEMA, SBA, IRS, and USDA, as well as local voluntary agencies and insurers to receive personalized information about available assistance resources that may be available to them. At the height of recovery operations, as many as 16 LACs were open at community centers and other convenient locations in the five designated counties. As demand for their services began to decline after the first few weeks, the LACs were consolidated into smaller Disaster Recovery Centers (DRCs). In all, approximately 18,989 residents visited the LACs and DRCs for information and advice from Federal, State, local and voluntary agencies.

Through joint coordination, the CFCG and joint DFO recovery teams successfully delivered the following aid programs to southern California's households, businesses, and State, local and tribal authorities in the aftermath of the wildfires of 2003.



Homeland Security Secretary Tom Ridge and Under Secretary Michael Brown meet with DHS-FEMA assistance personnel at the Scripps Ranch LAC. (DHS-FEMA)

Assistance to Households

Department of Agriculture (USDA)

USDA's Food and Nutrition Service (FNS) administered the Emergency Food Stamp Program, which provided expedited food stamp assistance to eligible disaster assistance applicants. FNS reports that San Diego and San Bernardino counties completed distribution after providing over 2,600 households with \$853,939 in assistance.

Department of Health and Human Services (HHS)

Nine HHS agencies were initially activated to support joint response operations. Among them were 18 members of the U.S. Public Health Service's Commissioned Corps Readiness Force (CCRF), deployed to support the ARC, as well as experts from Mental Health and Substance Abuse, and the Native Health Service.

As operations made the transition to recovery, HHS agencies worked with their program grantees in State, local and tribal governments.

- The Administration on Aging (AoA) has provisions under the Older Americans Act to use a portion of State and Community program funds to provide technical services and reimbursement to State and tribal Organizations for expenses incurred for services to the elderly during a Presidentially declared disaster. AoA contacted the California Department of Aging and tribal organizations affected by the disaster and were able to communicate with local representatives about the people affected by the disaster.
- The Administration for Children and Families (ACF) Region IX office worked to address fire damages and food losses to its Head Start Program grantees. ACF worked with grantees, using Regional Office emergency funds to assist the grantees with their needs.
- The Centers for Disease Control and Prevention (CDC) provided Public Health advisors to the joint DFO, and coordinated outreach efforts with State and local health departments to raise awareness of post-fire health issues.
- The Indian Health Service (IHS) worked with its counterparts in the Department of the Interior's (DOI) Administration for Native Americans (ANA) to fund repairs and reconstruction of homes on reservation lands, in coordination with tribal authorities. The agencies used their interagency agreements to fund cleanup costs and work with area leaders to assess further needs of the impacted communities.
- Health Resources and Services Administration (HRSA) received reports of the impact of the fires among grant recipients in areas health centers.

Department of Housing and Urban Development (HUD)

HUD offered aid to homeowners through its mortgage insurance programs, increasing loan limits, and imposing moratoriums on foreclosures in the affected areas. Through the joint DFO, HUD worked with DHS-FEMA to find long-term housing solutions for 42 families found to be illegally residing on San Pasqual Reservation lands. HUD also offered housing counseling and loss mitigation training to area lenders, in addition to other programs and activities, such as:

- Authorizing the sale of 21 vacant Federal Housing Administration (FHA) real estate owned homes valued at \$3.2 million at deep discounts to San Bernardino County for rehabilitation and to make housing available to displaced fire victims.
- Instituting a 90-day foreclosure moratorium on FHA-insured loans for disaster-affected properties. HUD also increased FHA loan limits for Riverside and San Bernardino Counties, and activated FHA's Rehabilitation Mortgage Insurance and Mortgage Insurance for disaster victims.
- Seeking cases of disaster housing needs unmet by insurance, SBA loans, and/or DHS-FEMA disaster relief, and find ways to meet them through its programs and coordination with other programs through the joint DFO.

Department of Homeland Security (DHS-FEMA)

Under the Stafford Act, DHS-FEMA's Individual Assistance (IA) Program provides a suite of grant programs to eligible disaster aid applicants, in partnership with Federal agencies and State governments. IA features four major elements:

- *Individuals and Households (IHP) Program* – Comprised of the Housing Assistance (HA) and Other Needs Assistance (ONA), IHP is perhaps DHS-FEMA's best-known disaster recovery program. If the applicant identifies a potential need for IHP assistance during registration, a DHS-FEMA inspector is dispatched to visit the applicant's home.



A resident of Harbison Canyon shows President Bush and DHS-FEMA Under Secretary Brown the ruins of her home. (DHS-FEMA)

Inspectors verify damages and forward their findings to DHS-FEMA caseworkers, which review the information and process the application.

- The HA Program can provide up to \$5,100 in awards to meet emergency home repair expenses that are not covered by insurance. Under HA, DHS-FEMA can also provide temporary housing in mobile homes in areas where rental resources are not readily available.
- ONA is cost-shared on a 75 percent Federal, 25 percent State basis, and provides additional aid for other urgent needs, such as disaster-related medical, dental or funeral expenses, that cannot be met by any other source of assistance such as insurance and/or aid programs offered by other Federal programs, State and local governments, or voluntary agencies.

Under IHP, DHS-FEMA has provided over \$32 million in disaster assistance. As of February 10, 2004, DHS-FEMA issued 3,740 HA award checks totaling \$7,951,060 and 9,585 ONA award checks totaling \$23,964,250.¹⁹ Under the HA Program, DHS-

FEMA has also placed 90 families in temporary manufactured housing while awaiting home repairs.

- *Crisis Counseling* – The highly stressful experience of surviving disaster is traumatic for many, and DHS-FEMA provides financial support to State and local governments for crisis counseling services. To date, DHS-FEMA has approved \$844,025 for programs administered by State and local mental health agencies to provide this important post-disaster need.
- *Disaster Unemployment Assistance (DUA)* – Disasters also disrupt the livelihoods of many, causing loss of employment as area businesses are closed for repairs. In partnership with the DOL and State and local authorities, DHS-FEMA's IA program can provide supplementary aid to State and local governments in this regard as well. As of January 26, 2004, DHS-FEMA has approved 504 DUA claims totaling \$203,240, administered by DOL through local unemployment offices.
- *Disaster Legal Services* – The American Bar Association's Young Lawyers Division administers this program, which provides pro-bono legal advice to disaster victims, with administrative fees funded by DHS-FEMA.

Department of Labor (DOL)

On November 19, 2003, DOL announced a \$12 million federal grant from the Secretary's discretionary funds to create 750 temporary jobs for cleanup and restoration efforts in areas affected by the California Wildfires of 2003.

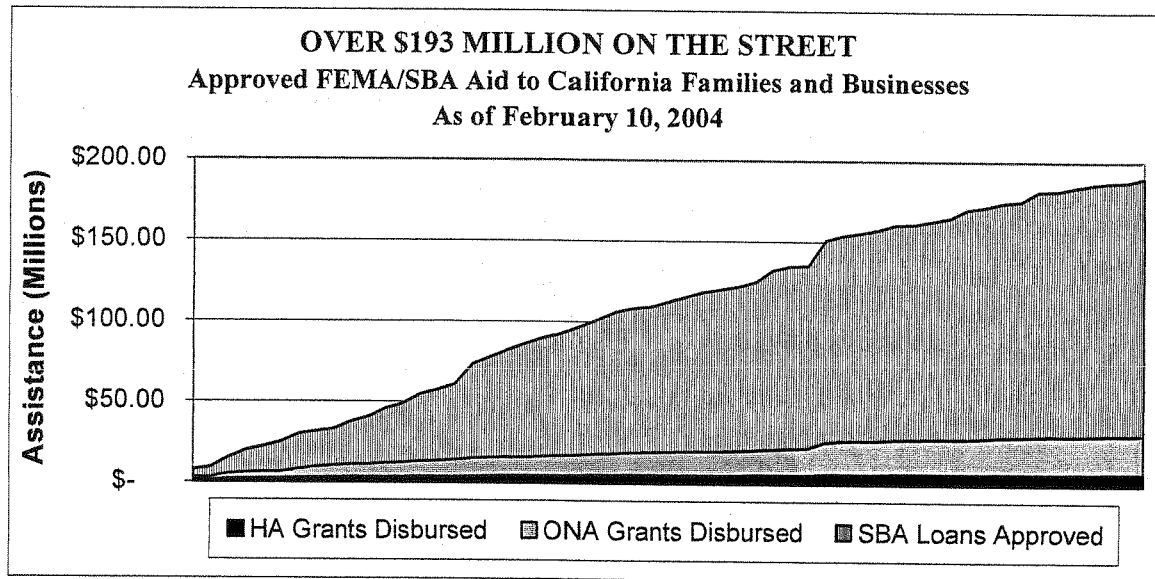
Department of the Treasury (Treasury)

After a disaster, certain losses or recovery-related expenses may be tax deductible. The Internal Revenue Service (IRS) distributed information about its tax assistance programs available to homeowners and businesses facing disaster-related losses at the LACs and DRCs.

Small Business Administration (SBA)

The high rebuilding costs in the burn areas mean that most property owners are facing a significant gap between their need and their insurance recovery. SBA's disaster loans are providing a way to fund this shortfall, allowing rebuilding to proceed. Based upon applicant screening, DHS-FEMA has referred over 14,000 applicants to SBA, where they can apply for low-interest disaster loans of up to \$200,000 to repair or replace their homes and \$40,000 to replace lost personal property. SBA disaster loans are the single largest source of Federal disaster assistance available to eligible individuals and households, accounting for over 80 percent of non-insurance recovery resources that have been made available to them following the California Wildfires of 2003 (See Table 4.1).

Table 4.1: Combined DHS-FEMA/SBA Aid to California Wildfires Applicants



Source: DHS-FEMA and SBA

At the peak of recovery operations, 100 SBA representatives were on the scene, staffing information desks at the LACs and DRCs, as well as attending public meeting throughout the designated area to provide information about its disaster loan programs. An additional 100 SBA support staff were also active at the Area Office in Sacramento. The fire victims have widely recognized the excellence of the service provided by SBA's disaster staff, which provided extensive follow up service to victims who registered with DHS-FEMA but had not submitted their SBA loan applications.

As of February 10, 2004, 1,245 homeowners have been approved for approximately \$144 million of the \$161 million in SBA loans approved to date for victims of the California wildfires. Final SBA disaster loan approvals for homeowners and businesses are estimated at \$175-200 million. The sole limiting factor identified by SBA is an inadequate number of licensed contractors to meet the immediate demand for disaster repairs. This contributes to inhibiting the disaster victim's ability to obtain building permits in a timely fashion, in turn delaying completion of repair projects and the disbursement of SBA loan funds.

Assistance for Businesses

Department of Agriculture (USDA)

USDA's Farm Services Agency (FSA) identified over \$41.3 million in crop losses as a result of the California Wildfires of 2003. FSA accepted over 300 formal requests for assistance, and fielded several times as many inquiries from producers regarding assistance available. Despite significant limitations caused by the availability of funding pending the 2004 Omnibus Appropriations bill, signed into law on January 22, 2004. FSA utilized the following programs in the recovery effort:

- *Emergency Conservation Program (ECP)* - Ten employees were involved in publicizing, accepting applications, and conducting site inspections for ECP, which could be used to

help farmers and ranchers to repair fire-damaged fencing and irrigation systems. FSA worked with NRCS to provide \$600,000 in emergency technical assistance to agricultural and rangeland producers, the funding for the majority of eligible projects was pending passage of the 2004 Omnibus Appropriations package. ECP may be able to help re-establish irrigation systems and livestock fences lost in the fires which will contribute to the long-term viability of tree crop production and livestock production.

- *Tree Assistance Program (TAP)* – FSA representatives also circulated information about TAP, which may be able to help re-establish high value permanent crops such as avocado and citrus trees for long-term production.
- *Livestock Indemnity Program*- This program provides assistance in recovering livestock losses.
- *Emergency Loan Program*- FSA's main program providing emergency financial assistance to agricultural enterprises, the Emergency Loan Program did not face the extent of short-term funding limitations encountered by its other programs.

The USDA Risk Management Agency (RMA) oversees crop insurance programs in the State of California, which are sold and serviced by the private insurance industry operating under a Standard Reinsurance Agreement with RMA. The companies reported that they have received 38 notices of loss due to fire damage in San Diego and Ventura Counties, where both citrus and avocados are insurable.

Most of the claims involve limited tree and fruit damage and, as a result, it is anticipated that the vast majority of these claims will not be indemnified because the production will exceed the guarantees. The 2003 crop had been harvested at the time of the fires and any loss will be on the 2004 crop. Final claim amounts will be determined in late 2004 after completion of harvest. At this time it is anticipated that claims will not exceed \$50,000, barring additional damage during the 2004 crop year. However, the indeterminate cause of several of the fires may delay processing, since crop insurance authorizing language specifies that perils of a natural origin will be covered under the policy. RMA will continue to review losses to determine if policy provisions cover claims and settle claims at the end of the crop year.

Rural Development (RD) was also active in providing aid to rural communities. RD Damage Assessment Teams provided area residents with information about available RD programs for area homeowners and businesses.

Department of Commerce (DOC)

DOC's Economic Development Administration dispatched representatives to the affected areas to seek opportunities to provide assistance through its programs.

Department of the Treasury (Treasury)

IRS representatives were available at the LACs to advise business owners on disaster-related tax matters.

Small Business Administration (SBA)

SBA can provide low-interest loans of up to \$1.5 million for eligible businesses under its Physical Damage Loan Program, which addresses physical damage to real estate and/or loss of physical

inventory, and its Economic Injury Disaster Loan Program, which can meet expenses related to a disaster-related downturn in business.

As of February 10, 2004, over \$16 million in SBA loans have been approved for businesses. Nearly 200 businesses had been approved for \$13,908,200 in Physical Damage Loans and \$2,178,600 in Economic Injury Loans from SBA. These totals are expected to rise markedly, since SBA's qualifying incident, grace, and economic injury periods remain open for their California Wildfires-related loan programs.

Assistance for State and Local Governments

U.S. Army Corps of Engineers (USACE)

USACE is completing work on 20 priority debris basins in San Bernardino County following the debris flows and flooding caused by the December 25, 2003, storm. To date, USACE has conducted \$8.5 million in assistance under its own authorities. Remaining basins requiring debris removal will be completed by the County and may be eligible, as appropriate, under DHS-FEMA's PA program, which may be coordinated through the MASG. A multi-agency team comprised of representatives from DHS-FEMA, USACE, and State experts conducted an assessment of flood control basins in burned watersheds in Ventura County. The team determined that these facilities were largely unaffected by the Christmas Day storm and are ready for future events. While additional assessments may be conducted in Riverside and Los Angeles counties, San Diego County does not have similar flood control basins.

Department of Agriculture (USDA)

USDA's Rural Development (RD) Damage Assessment Teams worked with community leaders to assess damage to community infrastructure and RD-funded water projects. USDA's Science and Technology Transfer Service Team has also been actively working with local and regional organizations, providing scientific advisory services to recovering communities on issues related to construction, urban development, risk assessment, fuels management, and ecological restoration.

Department of Homeland Security (DHS-FEMA)

In addition to its IA Programs, DHS-FEMA also administers the Public Assistance (PA) Program, which provides cost-shared supplementary assistance to remove debris that presents a health and safety threat to the general public, to perform emergency protective measures, and to repair or replace disaster-damaged infrastructure and public facilities owned by eligible State and local governments, as well as certain nonprofit entities. Funded on a 75 percent Federal, 25 percent State and local basis, PA is one of the most important sources of post-disaster infrastructure recovery assistance.

In partnership with the State OES, DHS-FEMA conducted briefings to inform authorities about the PA Program. Following the briefings, "kickoff meetings" are held, where applicants meet with program officers and submit PA applications. As of February 10, 2004, over 234 kickoff meetings have been held, 246 eligible PA applications have been received, and 381 PA Project Worksheets have been written for \$11,793,225 in eligible assistance from DHS-FEMA for State, local, and tribal PA disaster recovery projects.

Department of Transportation (DOT)

Fire-related damages to southern California's Federal-aid highways eligible under DOT's Emergency Relief (ER) Program are estimated at about \$25 million for State highways.²⁰ The bulk of repairs consisted of drainage work to prevent further damages from mudslides, such as cleanouts of bridges and culverts, drainage diverters, and standpipes, as well as replacing road signage and guardrails.

The U.S. Department of Transportation (DOT) coordinated with the California State transportation agency (Caltrans), the California Highway Patrol, and county and municipal emergency and transportation authorities through the California Division Office of the Federal Highway Administration (FHWA) to expedite delivery of ER Program assistance to repair roads, replace destroyed signage, as well as to reduce road hazards from flash-flooding and mudslides in the burn areas.

Emil Frankel, DOT's Assistant Secretary for Transportation Policy, noted that this was the first time California used Federal ER funds to mitigate highway damage due to a fire. As a result, FHWA had to work with Caltrans in establishing program guidance and limitations. However, Caltrans had experience with the program from other natural disasters that helped to facilitate the process of preparing damage assessment forms and funding requests, allowing repairs to proceed expeditiously. Further, through careful planning and coordination, DOT and Caltrans were able to replace guardrails immediately, rather than using temporary barriers and then replacing them later with guardrails under ER, efficiently avoiding double work in the burn area while reducing the impact to traveling public. "With only a few exceptions, all striping, signs, traffic barriers were replaced quickly to restore the integrity of the roadway system," reported Assistant Secretary Frankel.

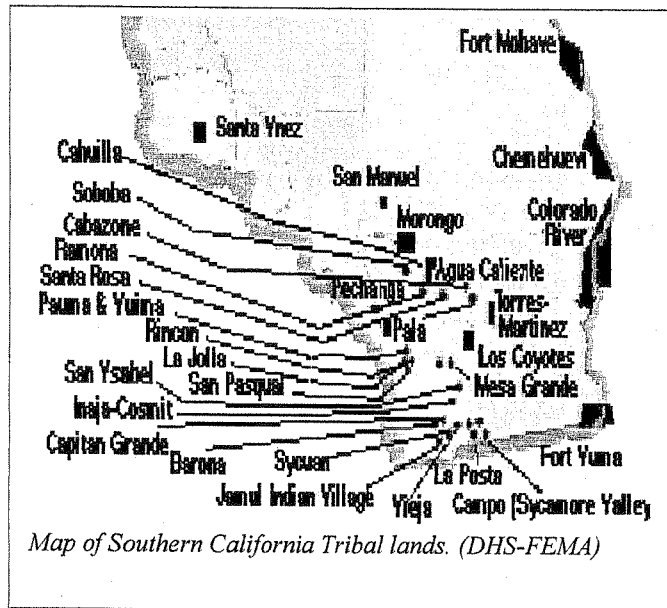
Since much of the damaged road facilities are located on or along lands administered by Federal agencies or tribal governments, FHWA coordinated extensively with USFS and BLM, as well as responsible tribal authorities, particularly in addressing debris flow and flooding risks to road systems.

Site inspections have been completed, and FHWA reviewers are working with State engineers to finalize Damage Assessment Forms that will serve as the basis for Federal funding. Through the MASG, DHS-FEMA coordinated with DOT and Caltrans to identify any potential infrastructure repairs not covered under ER that may be addressed under the PA Program.

Coordination of Assistance with Tribal Authorities

The California Wildfires of 2003 swept through 10 Indian reservations, killing 10 people and destroying over 130 homes. DOI's Bureau of Indian Affairs (BIA) reported that about 25,000 acres of Indian Trust land were burned in the fires. Hardest hit were the San Pasqual, with two deaths and 67 homes burned; the Barona, with eight deaths, 40 homes burned and a daycare center destroyed; and the Rincon, with over 20 homes lost. Fires also affected portion of the Capitan Grande, San Manuel, Viejas, Inaja, Santa Ysabel, Cuyapaipe, Mesa Grande, and La Jolla Reservations.

BIA spent \$731,443 on emergency operations, employing local and national resources in cooperation with tribal authorities to fight the fires and support operations. Reservation residents played an active role in firefighting efforts as well as post-fire watershed reclamation efforts to reduce the risks of mudslides and flash flooding. Led by BIA, Federal, State, local, and voluntary organizations coordinated aid in partnership with tribal authorities through the joint DFO.



Department of Agriculture (USDA)

- In coordination with the State, FNS provided emergency food distributions to reservations in the affected areas.
- In cooperation with BIA, USDA's RD Damage Assessment Teams provided information to tribal representatives on housing and business assistance available through RD programs; reviewed progress in restoring water and sewage systems; and provided temporary housing.

Department of Health and Human Services (HHS)

- The Administration on Aging (AoA) worked with tribal organizations affected by the fires to meet the needs of elderly residents. AoA expects to award OAA disaster assistance funds to two tribal organizations: The Southern Indian Health Council, Inc. and the California Indian Manpower Commission to help allay costs incurred for food, extensive staff time and counseling.
- HHS's Indian Health Service (IHS) staff has conducted meetings with tribal officials, health program directors, and other Federal and State government agencies. In cooperation with BIA, IHS worked with tribal authorities to define and address disaster-related tribal health care expenses as well the provision of sanitation services, estimated at approximately \$548,000.

Department of Housing and Urban Development (HUD)

HUD Native American Programs officials met with representatives from the Pechanga, La Jolla, Rincon, and Mesa Grande tribal governments to discuss available aid through the HUD's Indian Community Development Block Grant (CDBG). HUD is reviewing CDBG applications, as well as working through the joint DFO to identify flexibilities in existing funds to tribal authorities to support fire recovery efforts.

Department of Homeland Security (DHS-FEMA)

At the joint DFO, Tribal Liaisons for both the IA and PA programs were established, as well as a joint outreach strategy with DHS-FEMA partners and tribal authorities. On November 8, 2003, DHS-FEMA opened a LAC on the Rincon Reservation, and installed a phone bank at the Barona reservation to allow residents to register for disaster assistance. DHS-FEMA, and USDA RD staff conducted meetings with tribal leaders of the San Pasqual Band of Diegueno Mission Indians to distribute permanent housing loan applications and discuss temporary housing needs that could be potentially met by DHS-FEMA disaster assistance programs.

Table 4.4: DHS-FEMA Aid to Native American Tribal Governments.

Tribal Government	DHS-FEMA IA Programs	DHS-FEMA PA Programs
Pechenga Band of Luiseno Mission Indians		(Firefighting Costs Only)
San Manuel Indian Band of Serrano		X
Barona Group Capitan Grande Mission Indians	X	X
La Jolla Band of Luiseno Mission Indians		X
Mesa Grande Band of Diegueno Mission Indians		X
Rincon Band of Luiseno Mission Indians	X	X
San Pasqual Band of Diegueno Mission Indians	X	X
Viejas Group of Capitan Grande Band		
Sycuan Band of the Kumeyaay Nation		X
Inaja/Cosmit Band of Mission Indians		X

Source: DHS-FEMA

DHS-FEMA completed all Preliminary Damage Assessments (PDAs) on tribal lands, followed by PA program applicant briefings and kickoff meetings in mid-November. PA Kick-Off Meetings were completed by early December, and DHS-FEMA began to receive PA applications from tribal authorities. As of February 9, 2004, eight tribal governments are seeking assistance under the PA program; six of which have completed FEMA-Tribal Agreements.

FEMA's Voluntary Agency Liaisons met tribal officials to provide information about area voluntary agencies offering long-term recovery assistance, as well as potential sources of assistance from private and faith-based voluntary organizations for residents whose disaster-related needs cannot be met through available Federal or State programs.

Department of the Interior (DOI)

BIA led coordination efforts with area tribal authorities. BIA chaired a series of meetings between Federal and tribal authorities to assess needs and identify beneficial assistance programs. In turn, tribal authorities contributed to DOI's watershed reclamation efforts. As part of the Burn Area Emergency Response Teams (BAER – See next section), tribal governments participated

with BIA to minimize erosion and mudslide hazards in areas where fire cleared hillsides of vegetation.

Recovery Support

Environmental Protection Agency (EPA)

On October 29, 2003, EPA was tasked by DHS-FEMA under the FRP (ESF #10 – Hazardous Materials) to provide air quality monitoring services for workers involved in response operations. EPA technical experts and public information officers were deployed to staff the DFO, as well as two sampling teams and two technical contract teams to conduct air quality sampling. While final funding amounts are not yet available, EPA deployed the following programs and resources to support joint response operations:



EPA contractors fly over burned areas of Los Angeles County, looking for plumes of Hazardous Materials resulting from wildfires burning in the area. (Jason Pack/FEMA News Photo)

- Superfund Removal Program On Scene Coordinators.
- Superfund Removal Program Advice of Allowance.
- Superfund Technical Assessment and Response Team (START) Contractors.
- Environmental Response Team (ERT) West Personnel and Response, Engineering, and Analytical Contractors (REAC).
- Airborne Spectral Photo-Imaging of Environmental Contaminants (ASPECT) aircraft were deployed from EPA Region VII.

EPA completed its field activities by November 9, 2003, and completed demobilization of DFO staff by November 11, 2003. EPA national and regional toxicologists analyzed air quality data from the burn areas, in partnership with the California Air Resources Board (CARB).

General Services Administration (GSA)

With the activation of the FRP, GSA deployed its Telecommunication Regional Manager to implement the agency's ESF #2 (Communications) mission, as well as its Los Angeles Area Leasing Team, San Diego Area Leasing Team, Southern California GSA Fleet Management, and GSA Regional Emergency Coordinator staff to implement its leading role in ESF #7 (Resource Support). After successful completion of its missions, GSA's FRP roles were deactivated at the DFO as of November 14, 2003.

Under ESF #2, GSA:

- Coordinated the use of MCI phone bank van to provide telephone and Internet services to residents of Harbison Canyon. These services allowed individuals to communicate with out-of-area family, as well as to register for disaster assistance with DHS-FEMA.
- Worked with DHS-FEMA caseworkers to provide Area Code listings of affected areas in order to expedite disaster assistance.
- Ensured optimal allocation of resources by facilitating communications order processing between FEMA and State OES to eliminate duplication of efforts.

To date, GSA has obligated \$10,000 to its ESF #2 mission and has disbursed \$4,000.

Under ESF #7, GSA:

- Supported expedited response and recovery operations by employing two five-member Leasing Teams to rapidly complete leases for Satellite DFOs and three LACs. Leasing Teams also arranged for the expansion of the primary DFO in Pasadena, and are currently completing closeout of leases for facilities that are no longer needed.
- Conducted an extensive search for 8-10 acres of suitable space for a manufactured housing staging area centrally located between San Bernardino and San Diego. While it was decided to use existing space at March AFB, GSA worked with DHS-FEMA to arrange for the leasing of additional land for mobile home storage.
- Shipped 226,870 pounds of supplies and equipment at a value of almost \$1.6 million through its Federal Supply Service (FSS) Western Distribution Center (WDC) in Lathrop, CA. FSS also supplied four mini vans for use by DHS-FEMA and SBA.

To date, GSA has obligated \$25,000 to its ESF #7 mission and has disbursed \$7,700.

Office of Personnel Management (OPM)

OPM made a significant contribution to the rapid deployment of Federal resources by providing immediate and accurate technical assistance to Federal agencies and instructing them on their existing emergency pay, leave and hiring flexibilities.

OPM utilized existing staff expertise to provide Federal agencies with emergency-related human resource management guidance and flexibilities in the areas of pay, hiring and leave to enhance their ability to respond to the California wildfires. Director Kay Cole James also authorized agencies to conduct special fundraising activities outside of the Combined Federal Campaign to assist victims and their families, and established a website to facilitate the reemployment of those retired Federal firefighters wishing to respond to the recovery effort.

Voluntary Agencies and Long-Term Recovery

Voluntary agencies are among the first to arrive and the last to leave communities touched by disasters, working with local communities as they rebuild and attend to the all-too-often overlooked issues of long-term recovery. Long after national attention has shifted away from the

California Wildfires of 2003, it is these organizations that will help local authorities complete the final phases of the recovery process, which may take as long as three to five years.

DHS-FEMA works with private and faith-based voluntary organizations by providing training and donations management support as needed, and as a facilitator to assist voluntary agencies in forming Long-Term Recovery Committees (LTRCs) comprised of local private and faith-based organizations that identify and meet disaster-related needs in partnership with State and local officials.

Across the country, national and local voluntary agencies are an invaluable partner in emergency response and recovery operations. Private voluntary organizations such



The evacuation shelter at Norton Air Force Base held over 3,000 evacuees following the fires in Southern California. (DHS-FEMA)

as the American Red Cross (ARC) and America's Second Harvest are joined by faith-based organizations such as Lutheran Disaster Response (LDR), United Methodist Committee on Relief (UMCOR), Southern Baptists, and others to create a coalition of caring that provides essential services to vulnerable populations such as low-income families, the elderly, and area residents with special post-disaster needs.

In the response phase of a disaster, voluntary organizations open and operate shelters, provide feeding services, and meet a host of other vital needs. As State and local disaster response operations begin, DHS-FEMA Voluntary Agency Liaisons (VALs) at the Regional Office contact their counterparts at ARC, the affected State and county chapters of Volunteer Agencies Active in Disasters (VOAD – an umbrella group of private voluntary organizations active in the State), and Church World Service (CWS – a interfaith group similar to VOAD that serves as a contact to faith-based disaster aid groups) to assess the situation, identify what voluntary organizations have provided services, and plan for needs that may arise. In some cases, a representative from the State's emergency management agency specializing in voluntary agency coordination is also involved as well, to help better integrate volunteer agency services into the State and local governments' overall response and recovery operations.

If the President declares a major disaster or emergency, representatives from voluntary agencies may staff the DFO or provide information to disaster victims at the Local Area Centers and/or Disaster Recovery Centers during recovery operations. As Federal, State, and local authorities and voluntary organizations attend to immediate needs, DHS-FEMA, VOAD, and CWS act as partners and facilitators to local voluntary and faith-based groups as they work together to identify available recovery resources, the "money, manpower, and materials" that will be needed to help vulnerable individuals and families with unmet needs to begin the recovery process.

California has a highly developed voluntary agency capacity befitting its size and the variety of potential hazards it faces. Unlike most States, it has not one, but two VOAD coalitions for its northern and southern halves, as well as active local county-level VOADS and local coordination bodies, such as the Emergency Network of Los Angeles (ENLA). Southern California is the

home of Community Emergency Response Teams (CERT), a program to train local volunteers to act as auxiliary emergency response personnel, a pilot program which DHS-FEMA is working to expand nationwide in cooperation with State and local governments. Nonetheless, the scale of the Wildfires of 2003 presented a challenge for many of the area's voluntary agencies. The fires had a significant impact upon vulnerable communities such as low-income families, the elderly, the disabled, particularly in the rural mountain communities of San Bernardino County and the urban neighborhoods of San Diego County.

An estimated 10,000 people evacuated their homes as the fires advanced. ARC and other voluntary organizations worked with local governments to open 41 shelters to house the evacuees, in addition to several smaller "informal" shelter operations by local churches. ARC fielded over 8,000 local volunteers and 1,100 from across the country, offering food, shelter, crisis counseling, and help in planning their recovery. ARC and Southern Baptists distributed over 374,000 meals through 49 fixed feeding centers and 29 Emergency Response Vehicles (ERVs) (see Table 4.2).

Table 4.2: ARC Disaster Resources Deployed for the California Wildfires of 2003.

Consolidated Information	Total to Date
Shelters/evacuation centers	41
Shelter Population	10,871
Human Resource Information	
Local Workers	8,878
Out of State Workers	1,176
Total Red Cross Workers	10,154
Additional DRO Information	
Meals and Snacks	374,555
Comfort Kits	6,057
Health Services Contacts	12,700
Mental Health Contacts	15,961
ERVs Deployed	32

Source: ARC

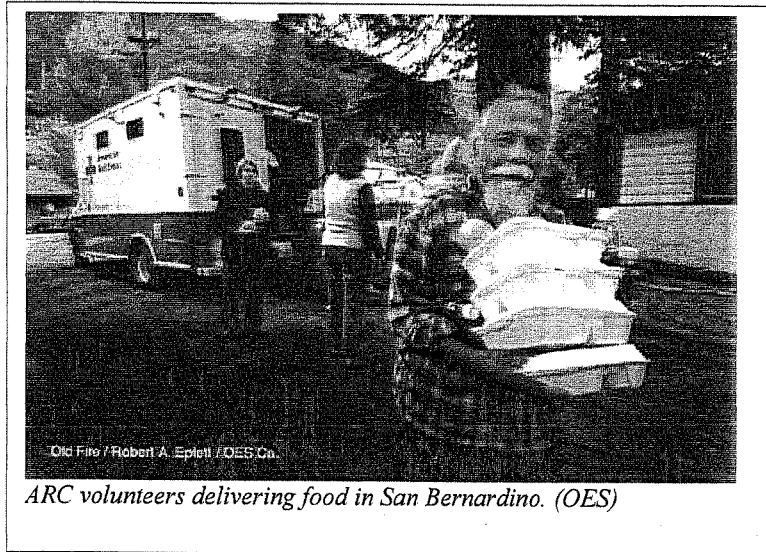
The Church of the Brethren provided childcare, while the UMCOR, American Baptist Men, LDR, and the Salvation Army provided other emergency services. ARC closed all of the shelters by November 10, 2003, but operated several area Service Centers throughout the declared areas, where residents could receive additional aid. ARC has committed over \$8.4 million to recovery efforts in California to date, and expects total costs for its organization to approach \$10 million.

Throughout the recovery process, the Region's DHS-FEMA VAL worked with counterparts in the ARC and CWS to identify area agencies with needed expertise and personnel such as LDR and UMCOR, which have caseworkers who can help guide applicants through the disaster assistance process. Through joint coordination efforts, voluntary organizations such as the National Organization for Victim Assistance (NOVA) and LDR come together to share expertise, as well as to conduct training sessions with local volunteers to further build capacity in area communities. Through an agreement with DHS-FEMA and ARC, the HOPE Coalition provided financial and economic counseling assistance to workers and small businesses to promote economic long-term recovery.

VALs coordinated with DHS-FEMA caseworkers to identify over 200 applicants with unmet needs exceeding available assistance programs and refer them to voluntary agencies where they could receive additional aid. Other voluntary agencies have been active in assisting with debris

removal, such as American Baptist Men, Apostolic Christian Church, Mennonite Disaster Service, Southern Baptists, UMCOR, Urban Opportunities Unlimited (UOU), and Volunteer San Diego to assist the Department of Public Works to establish procedures and conduct debris removal operations.

While Los Angeles, Riverside, and Ventura counties have determined that any unmet needs could be addressed by individual voluntary organizations, DHS-FEMA and the Southern California VOAD are working with voluntary and faith-based organizations in San Bernardino and San Diego as they develop LTRCs. The LTRCs are organizations with their own executive boards, budgets, and by-laws that will work together with local and tribal authorities to help vulnerable communities with long-term disaster-related needs that cannot be met through other programs. A DHS-FEMA VAL dedicated to tribal authorities proved particularly effective in building bridges between voluntary organizations and tribal authorities to help vulnerable individuals and families with long-term disaster-related needs that cannot be met through other programs.



Mitigation: Managing Post-Fire Risk

Wildland fire-related risks to lives and property remain long after the last blaze has been controlled. In addition to providing recovery assistance to individuals and families, CFCG and MASG worked to address the post fire hazards of flash flooding and landslides, as well as supported efforts to improve State and local response capabilities through the Governor's Blue Ribbon Fire Commission.

Tragedy struck on December 25, 2003, when mudslides flushed through the canyons and foothills of the San Bernardino Mountains after several inches of rain loosened the baked soils and shattered rocks of the burn areas. Water-resistant resins in the soil created by the burning chaparral brush further exacerbated the risk of flash flooding by limiting the amount of water absorbed by the ground. No longer confined by trees and vegetation, a 10-15 foot high wall of rapidly moving debris the consistency of wet cement, loaded with burnt and broken debris swept down the scoured hillsides, through a family Christmas celebration in Waterman Canyon and through a KOA campground in nearby Devore.

"It looked like an Oregon logjam coming at us. You could hear the trees snapping," recalled one witness.²¹ While first responders managed to rescue a few residents trapped in their homes or cars, a total of 16 people were killed, most of them young children. The mudslides damaged 52 homes in the area. Early assessments from the flooding and mudslides in San Bernardino County exceed \$38 million in damages to residences, businesses, and infrastructure.²²

In response to the incident, DHS-FEMA expanded the incident type of the major disaster declaration to include flooding, mudflow, and debris flow directly related to the wildfires, allowing applicants with damages related to these causes to be assessed for eligibility on a case-by-case basis until March 31, 2004. The incident emphasized that in addition to the delivery of aid programs, a long-term, combined effort by Federal, State, and local officials will be needed to minimize the impact of post-fire hazards.

Watershed Rehabilitation: Burned Area Emergency Response (BAER)

Even as firefighters jointly worked to contain the blazes, another interagency team of watershed rehabilitation specialists converged on the area and set up operations to take on the safety hazards and threats caused by the fires. In coordination with partners in State, local, and tribal governments, as well as local landowners, USDA's NRCS and USFS, and the DOI's U.S. Geological Survey (USGS), National Park Service, Bureau of Land Management, U.S. Fish and Wildlife Service, and Bureau of Indian Affairs completed a series of projects to address potential post-fire hazards through their Burned Area Emergency Response (BAER) Teams.²³

Staffed with hydrologists, soil scientists, engineers, biologists, range conservationists, and other professionals, BAER Teams assessed the burn areas and prescribed treatments to protect the land in the burned areas and downstream communities. All involved stakeholders successfully developed a common template to assess the damage to watersheds and prescribe preventive measure that would reduce the risk of floods and mudslides. By using a common damage assessment method across all ownership, agencies were able to prioritize projects and cooperatively address the most critical areas.

With the BAER Teams, The USFS and NRCS worked with State and local agencies to implement emergency stabilization activities that are focused on short-term actions to mitigate the potential for flooding and mudslides on burned areas over the next one or two rainy seasons. Additional rehabilitation work may be necessary over the next several years to ensure that watershed integrity is maintained, invasive weeds do not get established, land is re-vegetated, and key transportation routes and facilities are not damaged.

The sole limiting factor identified by USFS and NRCS related to BAER operations was uncertainty resulting from the pending passage of the USDA appropriations bill. While the 2004 USDA appropriations were signed into law on January 22, 2004, the lack of funding for programs complicated planning and prevented additional projects and more timely assistance. Following the signing of the 2004 appropriations, DHS-FEMA facilitated a meeting among USFS, NRCS, and OES to discuss processes to expedite appropriate use of the omnibus bill's \$225 million in funding to address fire area recovery following the California Wildfires of 2003.

Natural Resources Conservation Service (NRCS)

NRCS began working with area communities well before the fires to identify potential protective projects and preparing survey reports of priority areas, such as critical access routes and other strategic defensible areas within the wildland-urban interface. Early coordination resulted in laying the framework for implementation of a well-funded Emergency Watershed Protection program, with the \$150 million in "no year" funds that have been appropriated.

NRCS, the BAER lead agency for soil conservation efforts, implemented Emergency Watershed Protection (EWP) assistance, in partnership with State agencies and local communities. NRCS worked with private contractors and local agencies to complete the installation of 12 "Urgent and Compelling" EWP projects, as well as seven other high priority EWP projects to protect key facilities.

NRCS obligated \$550,000 towards these 12 projects in Los Angeles, San Bernardino, San Diego, and Ventura Counties, as well as \$372,000 for other erosion control projects that are protecting over \$5 million in property from further losses. Following the Christmas Day storm, NRCS conducted additional assessments in areas of San Bernardino County that were affected by debris flows and flooding. NRCS plans to add projects that result from these assessments the post-fire EWP. In addition, NRCS has prepared 44 Disaster Survey Reports recommending secondary EWP projects to the State, approving 36 projects to date.

CFCG and MASG recognized that a shortfall created by delayed USDA appropriations would cause significant problems for State and local governments faced with the threat of additional damage from post-fire debris flows and flooding. DHS-FEMA attempted to alleviate the impact of this shortfall by working with NRCS and OES to identify EWP projects that may also be potentially eligible under its Public Assistance (PA) Program, which can provide supplemental assistance with work necessary to reduce immediate threats to life and property. Through MASG, the agencies established a joint review process to expedite approval of funding so that communities could implement the necessary protective measures. Many of these projects have already been completed and will be funded under the PA Program. Additional projects approved and funded either through NRCS or DHS-FEMA will be completed by Spring 2004.

NRCS plans to spend \$24 million on post-fire mitigation and the remaining funds will be devoted to tree mortality according to a plan that the NRCS has been working on with local county governments since mid-2003. While this is welcome news to areas still under threat from post-

fires flooding and debris flows, the full commitment of these may take two years or more, requiring a continued commitment to coordination.

U.S. Forest Service (USFS)

Since much of the burn area was located in and around National Forest lands, USFS played a key role in implementing BAER projects to protect against mudslides and flash flooding. BAER burn treatments undertaken by USFS crews included:

- Sandbagging hillsides vulnerable to sliding.
- Installing K-Rail fencing and concrete barriers to retain hillsides.
- Mulching by hand crews and helicopters to aid in water and soil retention.
- Hydroseeding hillsides with a liquefied mix of enriched wood pulp and grass seed. The woody material solidifies, temporarily holding the hilltop in place and allows for the grass to sprout, its roots helping to hold the hillside in place.
- Road maintenance, such as digging catchment basins to reduce water flows, reshaping roads, clearing ditches, and installing culverts to ensure adequate drainage systems.

By the time USFS completed its mulching operations and demobilized BAER work crews in late December, their projects protected over 14,000 at-risk acres from further danger. USFS crews remained on duty to conduct road maintenance work on National Forest lands and monitoring the effectiveness of BAER treatments. In all, USFS has approved \$9 million in burn treatments, as well \$11.5 million for fire mitigation and fuel reduction on non-Federal lands, as well as an additional \$5-6 million for marketing and utilization of wood products from fuel reduction activities.



*A BAER Team member clearing a culvert
(U.S. Park Service)*

The Forest Service is also moving to treat the underlying problems that place many communities at risk from wildland fires and continues to work with the southern California communities to implement strategically placed hazardous fuel treatment projects on the National Forests and adjacent private lands. The projects' objectives are to reduce fuels along roadways and provide effective evacuation routes, thin and remove dead trees, reduce fuel hazards and provided fuel breaks, all of which were effective during the recent fires. Additional work remains on the National Forests in southern California, which are experiencing serious forest health problems. An additional \$90 million is planned for FY 2004 for this work that will fund projects on both Federal and private lands.

USFS Research and Development is leading a coalition of scientific and technical organizations to assess the situation and providing advice and expertise on recovery efforts. They will design follow-up studies to fill in key gaps in the science of fire recovery efforts. Their resulting action plan will likely go well beyond the initial efforts of recovery and stabilization and address such issues as advanced technologies in fire resistant housing construction, factors impeding the

effective implementation of biomass removal, and techniques that homeowners can implement to reduce their risk within the urban-wildland interface.

In the 2004 appropriations, USFS received \$20 million for the reduction of hazardous fuels. These funds are being committed immediately, in partnership with State and local authorities. The 2004 Omnibus Bill also provided an additional \$25 million for hazardous fuels reduction and \$25 million for removal of trees and mitigation on State and private lands. The Forest Service will begin working with CDF on using these monies for appropriate grants.

U.S. Geological Survey (USGS)

USGS geologists developed a debris flow modeling and mapping capability that could be used to identify potential debris flows in the burn areas. The resulting mapping was used to assist the San Bernardino National Forest BAER Team with evaluation of risks to lives and property from debris flows and flooding to prioritize burn treatment project areas. Recognizing the value of these maps, the MASG requested that USGS, with DHS-FEMA funding and support, complete analyses and mapping for the other counties affected by the wildfires. Through MASG, USGS provided these mapping products to local authorities to enable them to identify hazard areas and assist in emergency response planning.

In one such study, USGS surveyed 119 basins and found 21 with a 67 percent or greater probability of having debris flows if 1.12 inches of rain were to fall on the area within an hour (a "25-year flood" event). Sixty-nine other basins were found to have a 33 percent or greater probability of experiencing mudslides as well; a significant hazard. Indeed, Waterman Canyon was among several locations identified in USGS mapping data as a debris-flow hazard, prompting closure of the area by the owners of the lands where the Christmas party had taken place.²⁴ USGS shared their analysis with DHS-FEMA and OES, and was distributed to local officials.²⁵

USGS also assisted in augmenting local communities' early warning capabilities by installing stream flow and rain gauges, in order to monitor the heightened risks for flooding and mudslides. In San Diego, USGS has worked with local authorities to implement a more comprehensive rain gauge system at its reservoirs. The system was then integrated with the County's existing emergency alert system to warn residents residing in hazard prone areas if rainfall accumulations are sufficient to promote flooding or mudslides. USGS was also active in working with local officials to streamline permitting procedures in order to expedite BAER projects.

Other BAER Partners

Bureau of Indian Affairs (BIA)

BIA has assisted affected tribes in developing and funding \$3.7 million in Emergency Stabilization and Rehabilitation (ESR) plans to mitigate damage caused by the fires.

Bureau of Land Management (BLM)

Planned expenditures for emergency stabilization on BLM-administered lands are estimated at \$898,400.

Fish and Wildlife Service (FWS)

As part of BAER, the FWS completed Emergency Stabilization plans for the National Wildlife Refuge Lands impacted by the Piru Fire in Ventura County, as well as the Otay and Cedar Fires in San Diego County. These plans provide \$111,122 in recovery assistance to the state.

National Park Service (NPS)

No Park Service lands were directly affected, but NPS will continue to participate with our interagency partners in efforts to improve data collection, monitoring of fire effects, develop predictive tools and mitigation efforts to reduce the risk of future disastrous fires.

DHS-FEMA Role

At the State's request, DHS-FEMA reopened the incident period of the disaster declaration, allowing applicants with damages from flooding, mudflow, and debris occurring from October 21, 2003 until March 31, 2004, that are directly related to the wildfires as potentially eligible for assistance. While the application period for fire damages closed as of January 9, 2004, individuals with fire-related flooding or mudslide damages will be assessed on a case-by-case basis and processed for Stafford Act assistance, as appropriate. As of February 10, 2004, 82 applications have been received from the designated flooding and debris flow locations and \$201,283 in IHP assistance has been issued.

As the BAER Teams concentrated on watershed remediation efforts in and around Federal lands, DHS-FEMA implemented its Hazard Mitigation programs. In addition to an extension of its IA and PA programs, DHS-FEMA and State governments work together to minimize future losses through flood insurance and mitigation program. Through its hazard mitigation programs, DHS-FEMA provides funds to States so that they can work with local governments and communities that are committed to hazard mitigation to choose projects designed to decrease future risks to lives and property. Parallel to the BAER work, DHS-FEMA flood insurance and mitigation programs can extend protection beyond the immediate burn areas, providing further measure risk management to residents residing in the wildland-urban interface.

DHS-FEMA administers The National Flood Insurance Program (NFIP), which offers Federally backed flood insurance policies administered by FEMA and distributed by local insurers in communities that agree to promote, institute, adopt and enforce floodplain management ordinances to reduce future flood damage. DHS-FEMA has conducted significant outreach efforts to publicize NFIP, and letting homeowners in fire-damaged area know that they can get as much as \$125,000 worth of coverage for as little as \$232. In partnership with the State of California, DHS-FEMA will also make \$14 million available under its Hazard Mitigation Grant Program (HMGP) for projects developed by the local communities to reduce disaster-related risks. A total of 311 Notices of Interest were received for HMGP by the February 6, 2003, filing deadline.

Recognizing that the existing information on flood hazards did not adequately portray the increased threat posed by the burned watersheds, DHS-FEMA rapidly developed updated flood maps for the burned watersheds. In ten days, DHS-FEMA analyzed over 400 miles of streams and produced over 45 maps showing the increased flood hazards. To make the maps available quickly, DHS-FEMA developed a website, www.caostfirefloods.net, where the maps could be downloaded. These maps served as the basis for a series of public information workshops on mitigation opportunities.

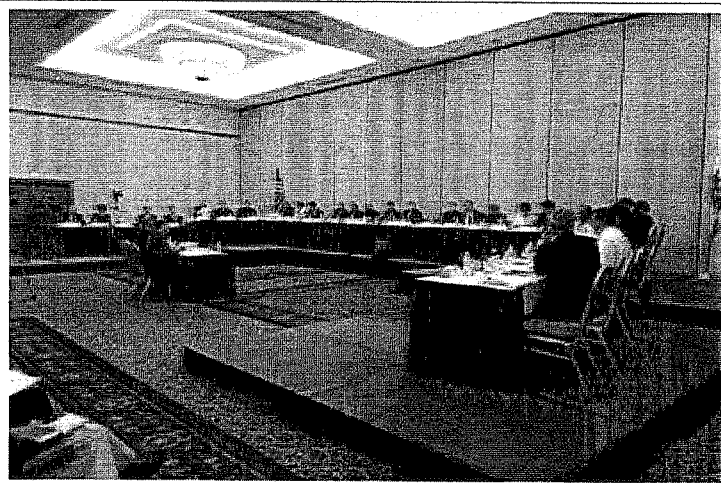
In addition to their work consulting with the State, DHS-FEMA hazard mitigation technical experts are in the community, staffing desks at area home improvement retailers to offer fire and flood safety-oriented rebuilding advice to homeowners. They were also active participants in Community Disaster Mitigation and Recovery Fairs organized by ARC, in conjunction with DHS-FEMA, USFS, NRCS, OES, CDF, and local agencies.

In addition to our support of managing post-fire risks through its Stafford Act programs, DHS-FEMA is committed to continued efforts to facilitate coordination among all stakeholders in Federal/State partnership through the MASG. Even after the joint DFO closes, DHS-FEMA will continue to provide its good offices to coordinate the efforts of Federal, State, and county agencies to maximize the benefits of the funding from the Omnibus Bill and other sources. Part of this effort will be to expand the work of the MASG to include the coordination of the above programs.

Governor's Blue Ribbon Fire Commission

"We need to take a hard look at what we can do to minimize the loss of life and property from wildfires," declared Governor Gray Davis. "A disaster of this magnitude should never happen again." On November 2, 2003, Governor Davis, in consultation with Governor-elect Arnold Schwarzenegger, named a

Blue Ribbon Commission to review the effort to fight the State's recent wildfires and provide recommendations to prevent destruction from future fires. The first meeting of the Commission was convened on November 13, 2003, in Manhattan Beach.



The Governor's Blue Ribbon Fire Commission is bringing Federal, State, and local stakeholders together to study the lessons learned from the California Wildfires of 2003 (OES)

Broadly representative of the affected communities, firefighting professionals, and other Federal, State, and local stakeholders, the Governor's Blue Ribbon Fire Commission is comprised of representatives from State, county, and city governments; State agencies, including CDF and OES; firefighting professionals and associations; members of Congress; and Federal agency representatives from the U.S. Department of Defense, DHS-FEMA, BLM, and USFS.

The commission has conducted a series of public meetings throughout the affected area. Experts from across the firefighting spectrum met to discuss a host of issues, including:

- A thorough review of the causes, response, and recovery efforts related to the California Wildfires of 2003.
- Reducing and eliminating jurisdictional and operational barriers that prevent the expeditious response of necessary resources to combat wild fires, and improving interoperability of communications equipment among first responders.

- Readiness training of personnel and equipment approved for use within the California incident command system.
- Establishing permanent fire-safe planning committees for each county and developing an interstate and/or regional master mutual aid system similar to the mutual aid network already operational among jurisdictions within California.
- Updating local building and planning regulations to include more stringent construction standards for high fire threat zones, requirements for brush clearance and fuel modification, and land use planning techniques that protect property.
- Increasing public outreach aimed at making properties more fire-resistant, setting higher standards for construction in high-risk fire zones, and exploring the creation of insurance incentives for homeowners who take fire-safe measures such as installing fire-resistant roofs.

The Governor's Blue Ribbon Fire Commission's sixth and final meeting will be held in Los Angeles on February 19, 2004, with a final report to follow in early April. For more information, please visit the OES website, at www.oes.ca.gov/.

Vegetation Control in Ventura County

Of the 3,600 homes were lost in the California Wildfires of 2003, only 24 of them were located in Ventura County, whose aggressive vegetation control programs and attention to fire safe construction might serve as a model to many southern California communities.

"We cannot just count on increased firefighting resources to solve our wildland fire problem," noted former State Senator William Campbell, chairman of the Governor's Blue Ribbon Fire Commission during a special panel meeting convened in Thousand Oaks to examine local firefighting operations and prevention practices.

Since 1967, Ventura County has required property owners to remove all brush and debris within 100 feet of their homes or face fines. If a homeowner chooses not to comply, the county will send contractors to clear the land for them, along with the bill — which includes a \$635 administrative fee. Out of approximately 15,000 notices sent to property owners, the County only has to clear only about 30 parcels a year. Support from the county's Board of Supervisors, which enforces the program, is critical to its success, Ventura County Fire Chief Bob Roper told the Commission.

To control vegetation growth, the Ventura County Fire Department conducts regular controlled burns, chipping, and aerial spraying to reduce available fuels for wildland fires. The department even mobilizes assets from the animal kingdom, using goats and sheep to graze vegetation from the hillsides, as well as herds of cattle, in cooperation with area ranchers, that can feed in areas that cannot be reached by heavy machinery.

Conclusion

Scorching over 750,000 acres and destroying over 3,600 homes, the California Wildfires of 2003 were among the largest fire incidents in American history. Given the scope and magnitude of the fires, as well as the extensive acreage of Federal lands involved, a unique level of joint coordination was necessary to expedite aid to the affected communities. Perhaps no less impressive were the smoothly integrated response, recovery, and mitigation operations among Federal agencies, State and local officials, and private voluntary and faith-based organizations.

Through the two-tiered CFCG and the joint DFO/MASG structure, a team of Federal, State, and local governmental and private organizations successfully provided aid to affected communities as efficiently and expeditiously by promoting continuous dialogue among key stakeholders, allowing them to coordinate over \$483 million in complementary Federal assistance programs, while minimizing duplication of efforts. CFCG and MASG promoted both horizontal coordination and vertical integration of available assets while limiting bureaucratic “stove piping,” identified by experts as a primary stumbling block to effective management, in order to promote fast and effective recovery operations.

While most incidents requiring extensive joint coordination may not require two tiers of coordination for effective emergency management, the bottom-up character of the CFCG/MASG dynamic allowed those with local knowledge and expertise to make crucial planning decisions on the ground that were integral to rapid response and recovery.

From providing timely and compassionate aid to southern California’s diverse communities, to repairing key infrastructure, and working to preventing further threats to lives and property through erosion control and watershed remediation measures, the shared success of joint Federal, State and local, and voluntary organizations in California represents no less than the “best practices” of interagency coordination, which many critics see as the key challenge in the age of Homeland Security.

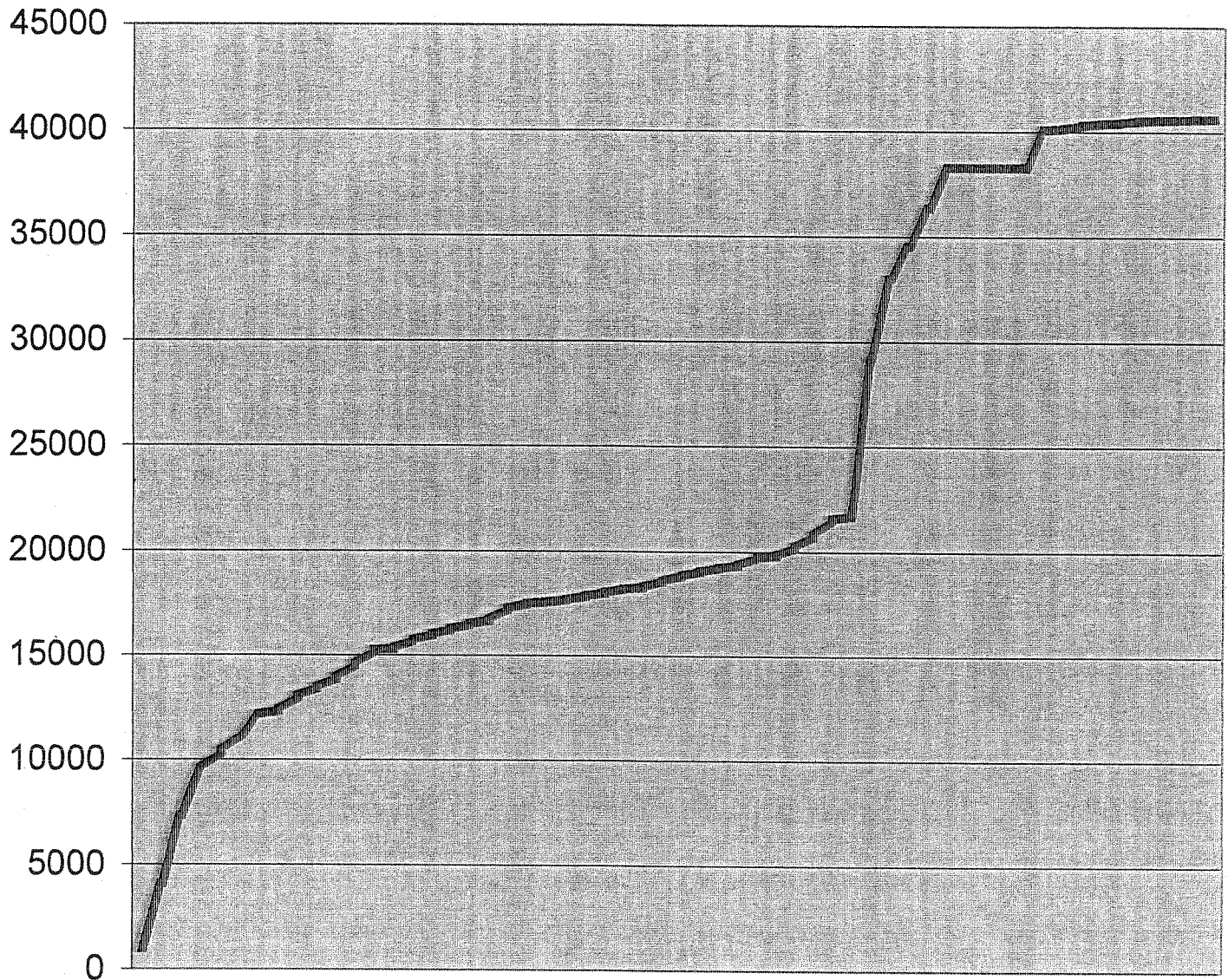
The rapid progress of response and recovery to date are a natural extension of FEMA’s time-honored “all-hazards” approach to incident management. The implementation of DHS-FEMA’s assistance programs and the coordination of Federal response and recovery operations can be scaled to meet the challenges of any disaster, from natural disasters that occur all-too-often to the catastrophic incidents that we can only hope will never come to pass.

ANNEX I:

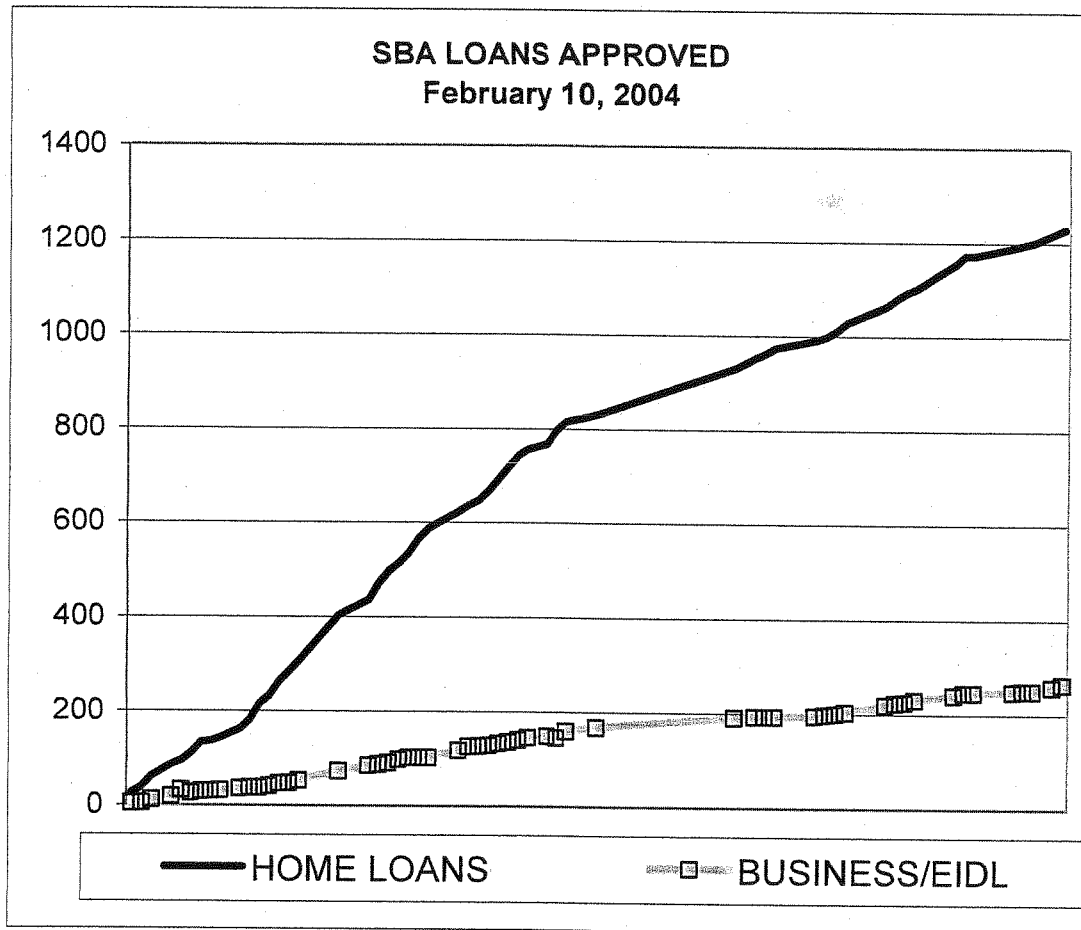
RECOVERY

RESOURCES

DISASTER ASSISTANCE APPLICATIONS FEMA-1498-DR-CA



The application period for fire damages closed on January 9, 2004. At this point, DHS-FEMA registered 38,296 applicants. The incident type and period has subsequently been extended to March 31, 2004, for damages caused by flooding debris flow directly related to the California Wildfires of 2003. As of February 10, 2003, an additional 2,361 applications have been taken, which will be reviewed on a case-by-case basis.



DHS-FEMA has referred over 14,000 applicants to SBA, where they can apply for low-interest disaster loans of up to \$200,000 to repair or replace their homes and \$40,000 to replace lost personal property. SBA disaster loans are the single largest source of Federal disaster assistance available to eligible individuals and households, accounting for over 80 percent of non-insurance recovery resources that have been made available to them following the California Wildfires of 2003. SBA can provide low-interest loans of up to \$1.5 million for eligible businesses under its Physical Damage Loan Program, which addresses physical damage to real estate and/or loss of physical inventory, and its Economic Injury Disaster Loan Program, which can meet expenses related to a disaster-related downturn in business.

As of February 10, 2004, 1,245 homeowners and businesses \$161,713,800 in SBA loans approved to date for victims of the California wildfires. Final SBA disaster loan approvals for homeowners and businesses are estimated at \$175-200 million.

Other Sources of Federal Assistance

Agency	Amount	Purpose
USACE	\$ 8,500,000	Debris clearance
USDA/FNS	\$ 889,872	Food Assistance
USDA/USFS	\$ 5,000,000	BAER
USDA/USFS	\$ 9,000,000	Soil Stabilization
USDA/FSA	\$ 25,000,000	Crop assistance
USDA/NRCS	\$ 550,000	EWP
USDA/NRCS	\$150,000,000	BAER, Tree Clearance
DHS/FEMA	\$ 14,000,000	HMGP
DHS/FEMA	\$ 844,025	Crisis Counseling
DHS/FEMA	\$ 115,932	DUA
DHS/FEMA	\$ 11,793,225	Public Assistance
DOI	\$ 7,500,000	Response Operations
DOI/BIA	\$ 731,443	Tribal recovery
DOI/BIA	\$ 3,700,000	Tribal watershed protection
DOI/BLM	\$ 3,200,000	Response/BAER
DOI/FWS	\$ 264,888	Response
DOI/NPS	\$ 111,122	Pre-fire brush clearance
DOI/USGS	\$ 6,850,000	Remote sensing (requested)
DOI/USGS	\$ 3,100,000	Remote sensing (obligated)
DOL	\$ 12,000,000	Cleanup grants
DOT/FHWA	\$ 14,500,000	ER Program (approved)
DOT/FHWA	\$ 4,900,000	ER Program (anticipated)
NIFC	\$ 7,500,000	Firefighting operations
GSA	\$ 35,000	Obligated for support
TOTAL	\$290,085,507	

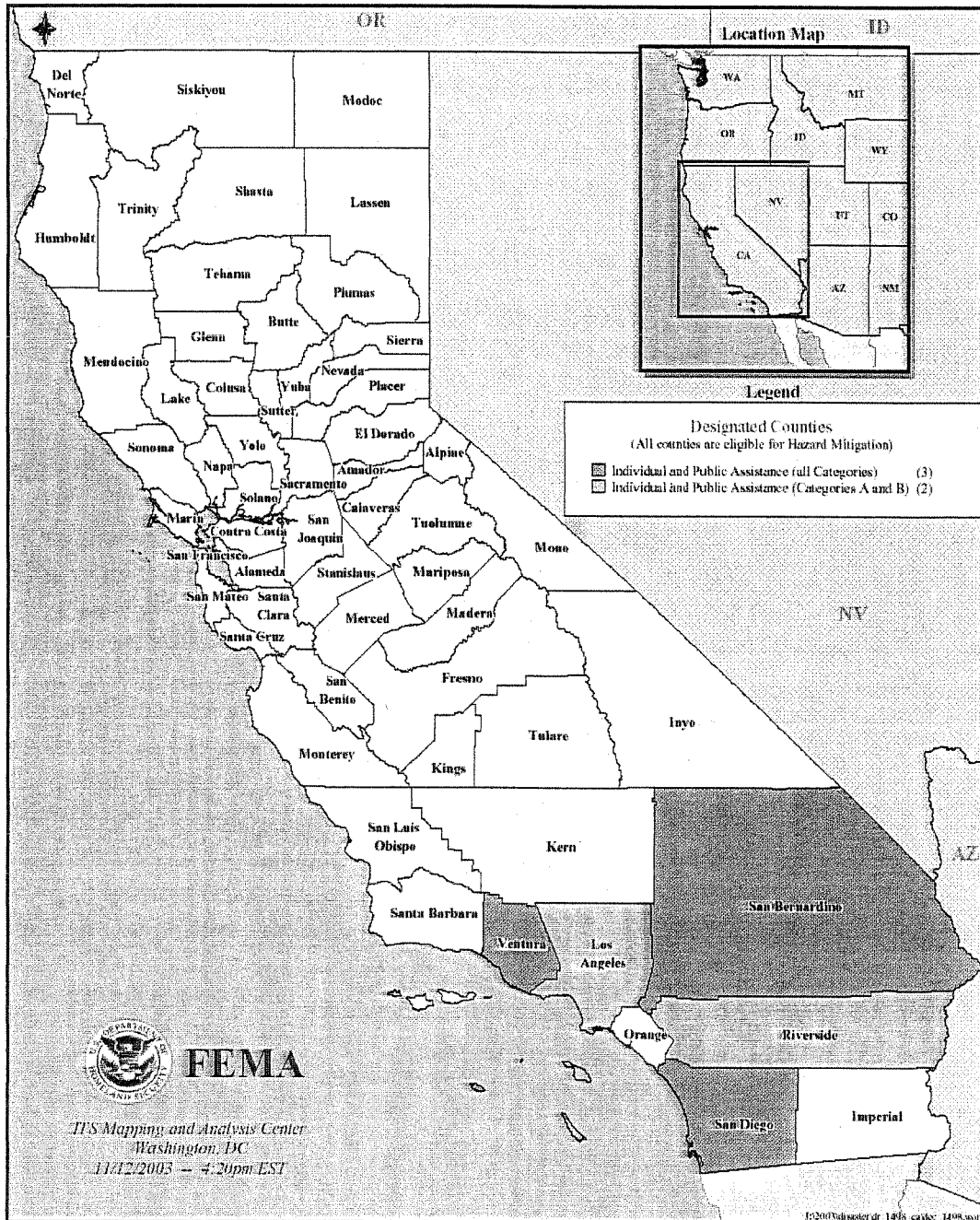
In addition to the \$193 million in disaster assistance delivered by DHS-FEMA and SBA, an additional \$290 million has been committed, bringing total Federal aid to over \$483 million.

ANNEX II:

MAPS

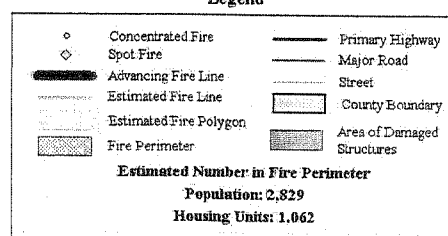
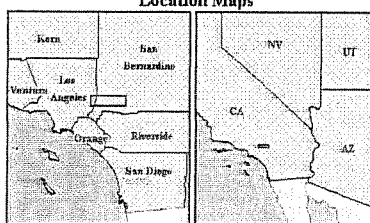
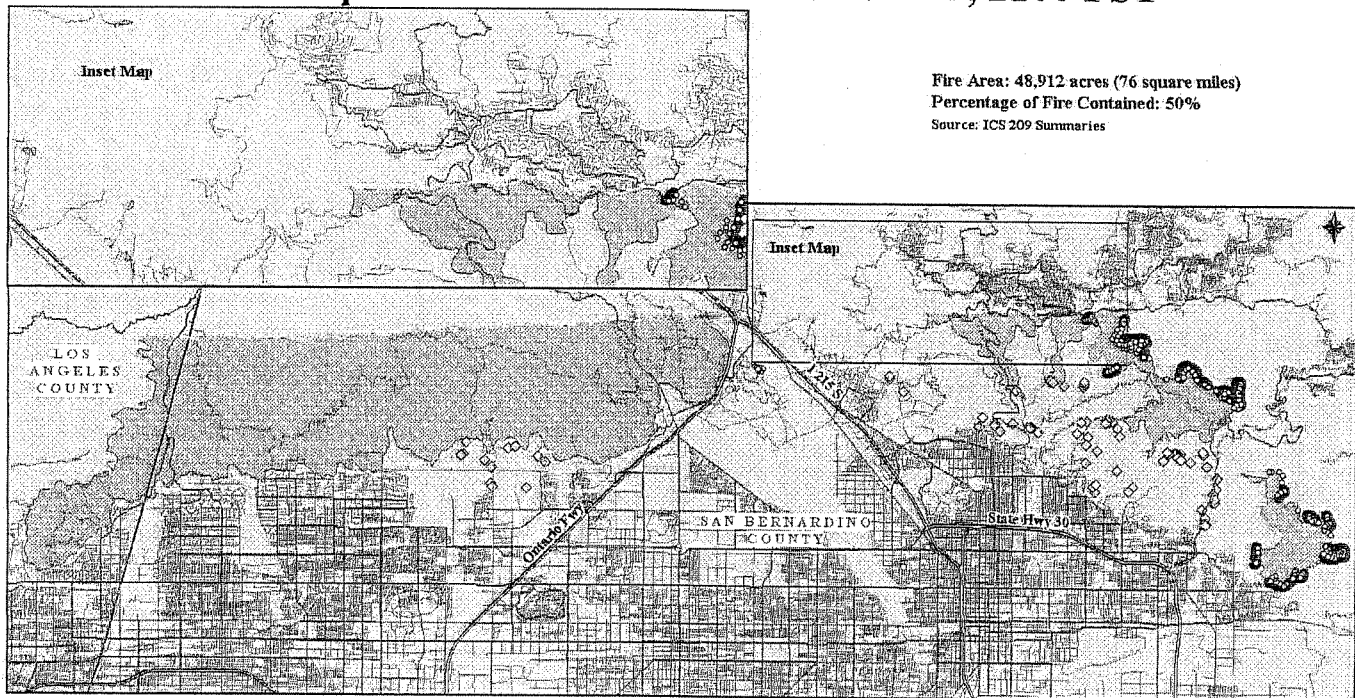
FEMA - 1498 - DR, California

Disaster Declaration as of 11/12/2003



FEMA - 1498 - DR, California

Fire Impact - Grand Prix as of 10/28/2003, 2100 PST



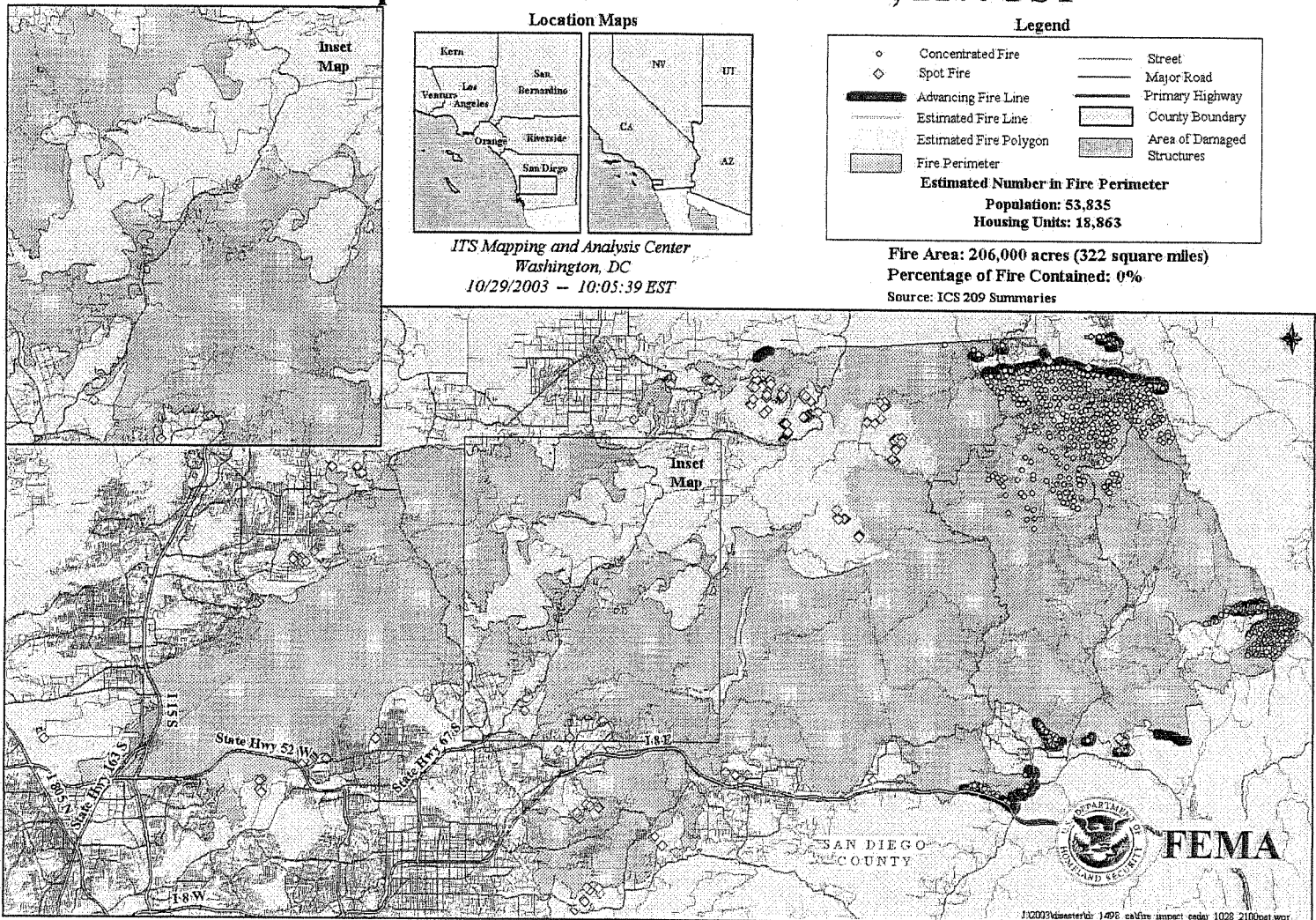
FEMA

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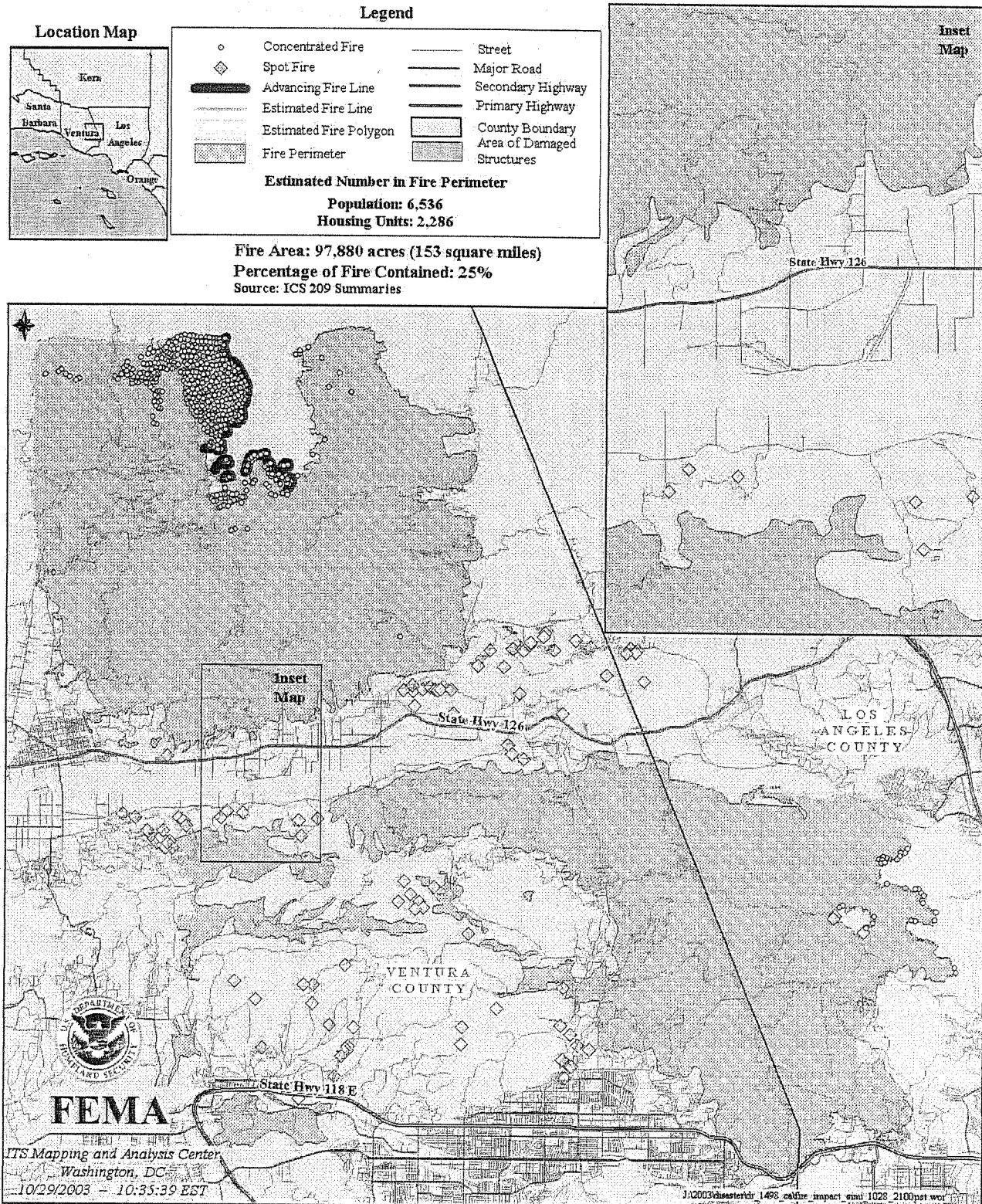
FEMA - 1498 - DR, California

Fire Impact - Cedar as of 10/28/2003, 2100 PST



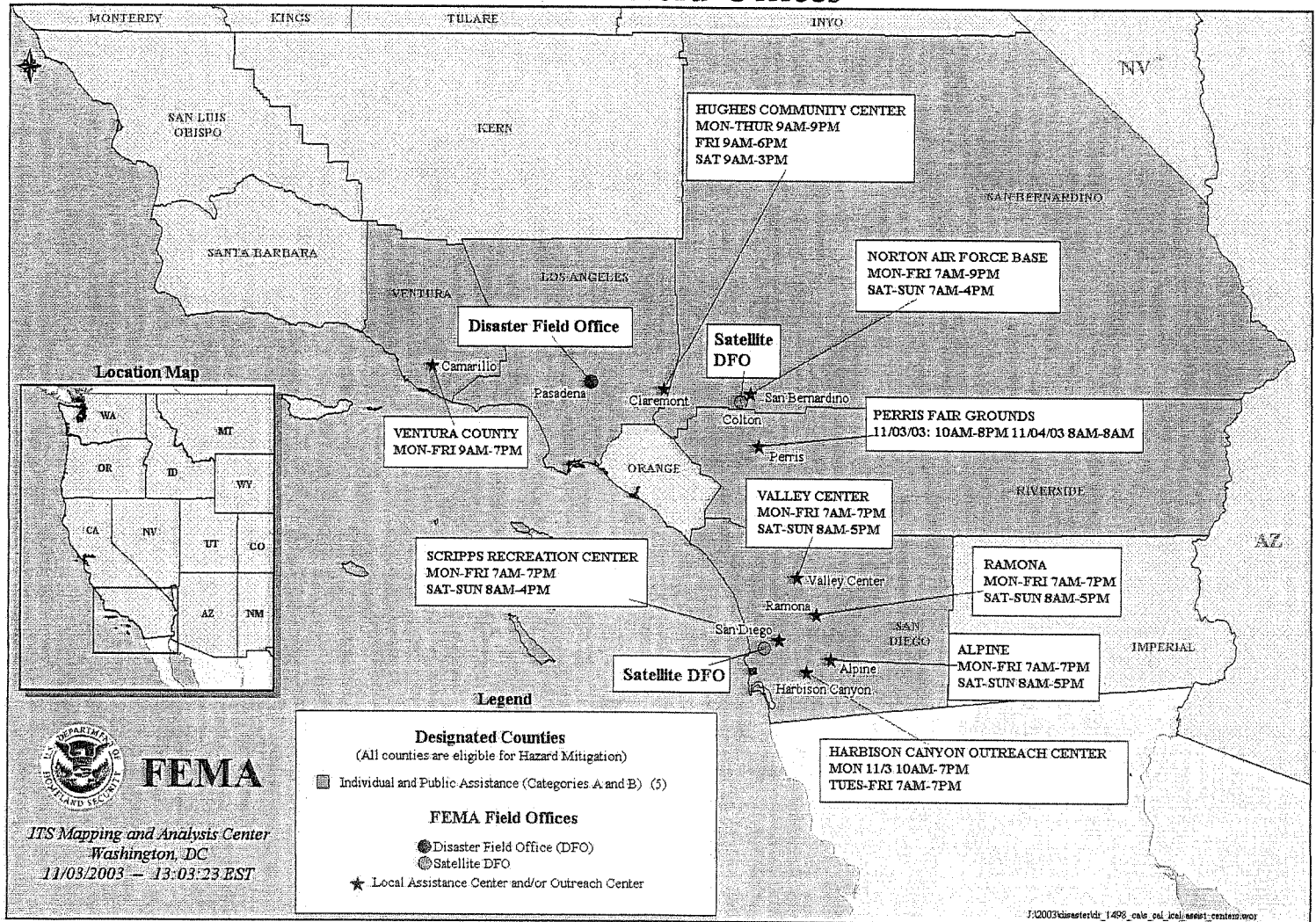
FEMA - 1498 - DR, California

Fire Impact - Simi Incident as of 10/28/2003, 2100 PST



FEMA - 1498 - DR - CA, Designated Counties

FEMA Field Offices



Notes

- ¹ See the “Healthy Forests Initiative” section of the USFS website, at www.fs.fed.us/projects/hfi/.
- ² The FRP is a signed agreement among 27 Federal departments and agencies, including the American Red Cross, that provides the mechanism for coordinating delivery of Federal assistance and resources to augment efforts of State and local governments overwhelmed by a major disaster or emergency through a series of agency-tasked ESFs. For more information, see pages 18-20 of this report, or visit the FRP section of the DHS-FEMA website, at www.fema.gov/rrr/frp/.
- ³ DHS-FEMA Non-duplication of other Federal programs is detailed in Section 312 of the Stafford Act, 42 U.S.C., § 5155.
- ⁴ See 44 C.F.R. §206.35-208
- ⁵ See 44 C.F.R. §206.5
- ⁶ Gail Fitzer-Schiller. “Californians Risk Lives, Homes to Live With Nature.” *Reuters*. October 31, 2003.
- ⁷ “Calif. Fire Damage Estimate Due Next Week.” *Reuters*, November 8, 2003. See also Lohse, Deborah, “Fire Damage Estimates at More than \$2.5 Billion.” *San Jose Mercury News*. November 12, 2003.
- ⁸ Kenneth Reich. “Fire Insurance Payouts Could Reach \$3 Billion.” *Los Angeles Times*. November 18, 2003.
- ⁹ “California Fire Plan.” Jointly published by the California Board of Forestry and the California Department of Forestry and Fire Protection, 1995. Pages 50-53.
- ¹⁰ NIFC. “Managing Wildland Fire: Balancing America’s Natural Heritage and the Public Interest.” Available online at www.nifc.gov/preved/comm_guide/wildfire/fire_3.html. An interactive reference of communicators, this is an excellent resource for general information about wildland fires; this is an excellent general-purpose information resource. See also Booth, William “California Faces Threat Of Flooding, Mudslides.” *Washington Post*. November 7, 2003.
- ¹¹ “Half of California Homes Face Wildfire Dangers.” *Insurance Journal*, October 23, 2003.
- ¹² Andrew Silva. “Many Dry Trees still Standing.” *San Bernardino County Sun*, November 12, 2003. See also Imran Gori, “Planning for Fires Paid Off.” *Riverside Press-Enterprise*, November 13, 2003, and “Flames Form 30-Mile Wall.” *Associated Press*, October 27, 2003.
- ¹³ Tracy Wilson, et. al. “Wildfire Toll Hits 1,518 Homes.” *Los Angeles Times*, October 28, 2003.
- ¹⁴ United Press International. “Bush Pledges Help with SoCal Fires.” October 27, 2003. DHS-FEMA is a component of DHS’s Emergency Preparedness and Response (EP&R) Directorate.
- ¹⁵ DHS-FEMA’s Response Division has three ERT-N Teams: Red, White, and Blue, which may be placed on alert to coordinate Headquarters action with Regional offices, in partnership with State emergency managers.
- ¹⁶ See Endnote #2.
- ¹⁷ Twenty –two deaths were attributed to the California Wildfires of 2003 at the time of containment; subsequently, two individuals severely burned in the fires succumbed to their injuries.
- ¹⁸ Transcript of Under Secretary Brown’s interview on the *NBC Today Show*, October 28, 2003.

¹⁹ It is important to not that many applicants are eligible for both HA and ONA awards and will receive a consolidated check.

²⁰ While local system applicants estimated another \$7.2 in damages to the local road systems, FHWA reported that they did not request site inspections.

²¹ Dawn Chmielewski and John Woolfolk. "Mudslide Tragedy Claims at Least Seven." *San Jose Mercury News*. December 27, 2003.

²² Brenda Gazzar. "Relief Available for Flood Victims." *Inland Valley Daily Bulletin*. January 17, 2004.

²³ For more information, please see the Southern California BAER Teams website, at www.baerteam.net/index.shtml.

²⁴ Chmielewski and John Woolfolk, see citation above.

²⁵ Miguel Bustillo, "Slide Threat Will Persist, Experts Warn." *Los Angeles Times*. December 27, 2003.

Final Programmatic Environmental Assessment

Recurring Actions in California

December 2003



FEMA

U.S. Department of Homeland Security
1111 Broadway, Suite 1200
Oakland, California 94607

This document was prepared by



Nationwide Infrastructure Support Technical Assistance Consultants
A Joint Venture of URS Group, Inc., and Dewberry & Davis LLC

1333 Broadway, Suite 800
Oakland, California 94612

Contract No. EMW-97-CO-0173
Task Order 61

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FINAL PROGRAMMATIC ENVIRONMENTAL ASSESSMENT (PEA)

FOR

TYPICAL RECURRING ACTIONS

**FLOOD, EARTHQUAKE, FIRE, RAIN, AND WIND DISASTERS IN
CALIFORNIA**

**Prepared for
Federal Emergency Management Agency**

**Prepared by
Nationwide Infrastructure Support Technical Assistance Consultants
(A Joint Venture of URS Group, Inc., and Dewberry & Davis LLC)**

December 2003

EXHIBIT 17

[More Metro news](#)

Building patterns are to blame, critics say

Home development in fire-prone areas 'a national problem'

By Mike Lee

UNION-TRIBUNE STAFF WRITER

October 25, 2007

It's time to rethink where homes are built in San Diego County, several scientists, environmentalists and politicians said yesterday as wildfires continued to carve up the region.

They question whether houses should be built in fire-prone areas, especially those far from established communities along the edge of the backcountry. When blazes spread in places such as Jamul, Escondido and eastern Chula Vista, homes on the urban-wildland border often are among the most at risk.

There are many fire risk factors, including how close homes are to canyons and whether they are in the direct path of Santa Ana winds.

"What we do is basically put subdivisions right in the middle of a fuel tank," said Steven Erie, professor of political science at the University of California San Diego.

"There is a conspiracy of silence among all major parties except maybe the environmentalists about the way we have developed," he said. "That way is building in high-fire-risk areas and then not putting in place the public services to either prevent (fires) or to do the firefighting."

Similar concerns were raised after the county's catastrophic wildfires in 2003 and smaller fires since then. Critics said some regulations have improved in recent years but development interests create enormous pressure for exceptions.

"We are really talking about dramatic changes in how we live or we will continue to get what we are getting," said Anne Fege, a retired supervisor for the Cleveland National Forest.

Fege said San Diego County's inability to restrict development to relatively fire-safe areas is repeated in Montana, Florida and many other places in a country of more than 300 million people.

"It's a national problem," she said.

Sen. Dianne Feinstein, D-Calif., highlighted the issue yesterday on Capitol Hill.

"Local governments have to begin to look at their zoning – about . . . siting of large subdivisions in the path of Santa Ana winds in parched, dry areas of the state," she said in a Senate floor speech.

Advocates of "smart growth" have made similar arguments for years as part of a push for developments that limit traffic congestion, power consumption and other complications of far-flung housing projects.

Eric Bowlby, a veteran Sierra Club member in San Diego, voiced frustration with the lack of attention given

to such concerns over the past decade. Despite this week's fires, he's not confident that will change.

"I am afraid that there will be a lot more development in fire-prone areas than we bargained for," he said.

Similar problems pop up across Southern California, said Tom Scott, a natural resource specialist at the University of California Riverside.

"The urban-wildland interface you measure now in thousands of miles in San Diego County," he said. "How could we not have problems with that kind of juxtaposition of people and brush fire territory?"

At the Building Industry Association of San Diego County, spokeswoman Donna Morafcik said it's too simplistic to lambaste developers for wildfire damage. She said building patterns are part of complex decision making that involves environmental issues, building costs and other factors.

For example, some homes are built next to open space because of requirements by government agencies to leave habitat for plants and animals.

"It's a balance," she said. "You have got to provide shelter and you want to have natural beauty surrounding you, so they have to coexist. So when nature erupts and fire rips through these corridors, don't blame the houses."

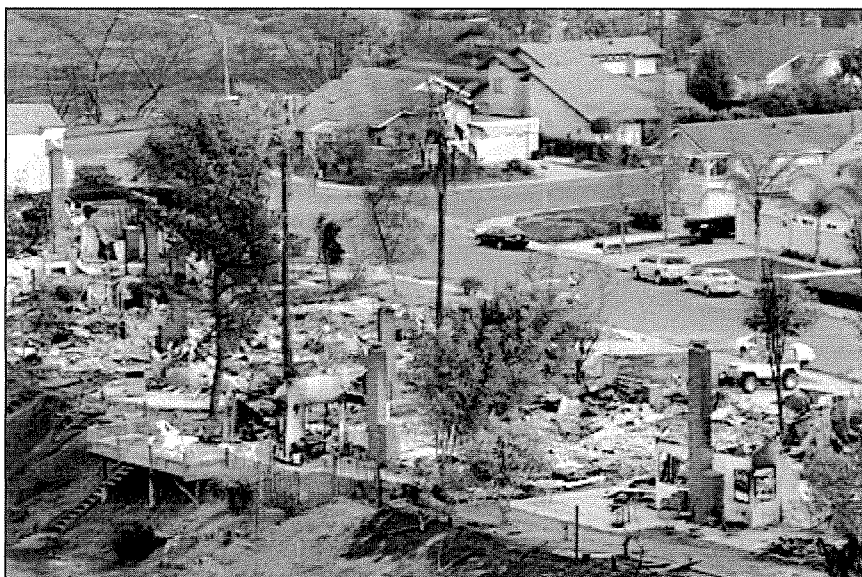
Whatever the cause, remedies range from relatively simple to complex. Richard Halsey, director of the California Chaparral Institute in Escondido, said a good next step is to prevent homes from being built at the tops of canyons, where fires tend to get funneled.

"We need to toughen up the rules," he said. "That is up to the politicians."

County Supervisor Ron Roberts said lessons can be learned from every fire, but that it's not time to criticize development decisions, some of which were made decades ago.

"There will always be some kind of threat," he said. "All of San Diego is fire-prone."

■Mike Lee: (619) 542-4570; mike.lee@uniontrib.com



K.C. ALFRED / Union-Tribune

Burned homes lined part of Aguamiel Road in Rancho Bernardo yesterday. Some

people are criticizing the pace of development in fire-prone areas.

Find this article at:

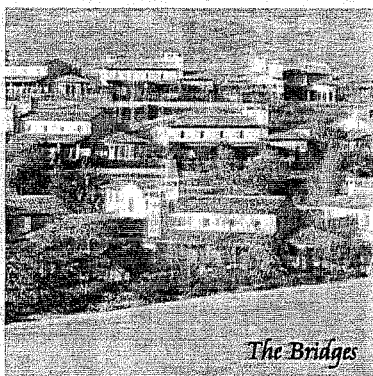
<http://www.signonsandiego.com/news/metro/20071025-9999-1n25build.html>

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EXHIBIT 18

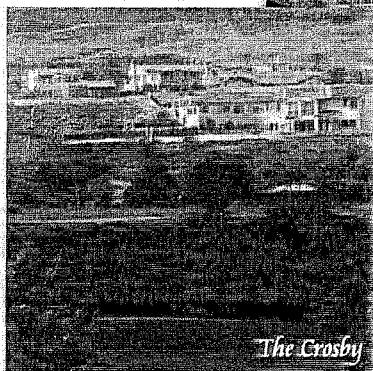
Sheltering in Place During Wildfires



The Bridges



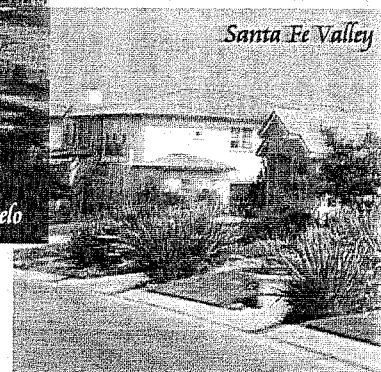
4S Ranch



The Crosby



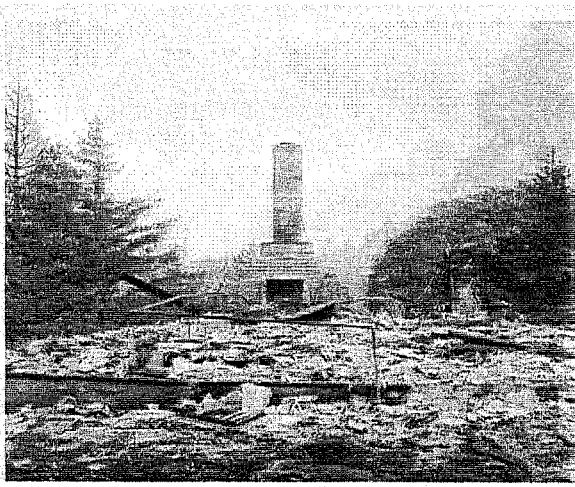
Cielo



Santa Fe Valley

A modern approach to
living safely in a wildland-urban
interface community.

For the communities of:
The Bridges, Cielo, The Crosby, 4S Ranch, and Santa Fe Valley



*Every year, communities
throughout San Diego County
experience the devastation
of wildfire.*

Southern California's warm climate, flammable vegetation, Santa Ana winds and steep terrain make up a dangerous wildfire equation. More and more communities are being developed within wildland-urban interface areas, placing people, pets and homes at risk of succumbing to wildfire.

Typically, when a wildfire threatens homes, evacuations are ordered. Evacuations will shelter residents away from danger during a catastrophic event. During evacuations though, panic and chaos ensue, causing traffic collisions, blocked roadways, injuries and deaths. In fact, most wildfire-related deaths occur during evacuation efforts.

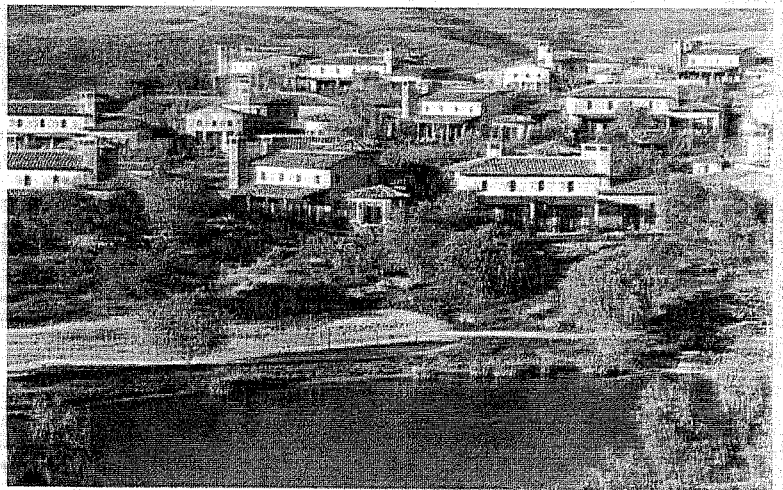
Your community, however, is designed to shelter you inside your home, far away from these congested evacuation routes.

By residing in one of the five communities listed below, your home is considered shelter-in-place. This means you will *not* need to evacuate during a wildfire. Homes in these master-planned communities are designed and constructed to withstand wildfire, so residents are safe to shelter inside.

This guide has been developed for you, the shelter-in-place resident. Inside, you will learn about the factors that make your community fire-resistive, the steps to take when a wildfire approaches, the supplies to keep in your family's emergency supply kit, and most importantly, the ways to maintain your shelter-in-place community for the future.

*The Rancho Santa Fe Fire
Protection District has five
shelter-in-place communities:*

*The Bridges
Cielo
The Crosby
4S Ranch
Santa Fe Valley*



* If you do not live in one of the communities listed left, you should not shelter-in-place. Instead, refer to the RSF Fire District's 'Getting out Alive' evacuation brochure, available at each of our fire stations or on line at <http://www.rsfire.org>.

Defining *Shelter-in-Place*

During a wildfire, sheltering in place means to stay inside a house or structure that is fire-resistant and air tight, and remain there until the emergency is over.

To be considered shelter-in-place, an entire community must be designed to withstand heat and flames from an approaching wildfire. Meaning, every home must share the same fire-resistant design qualities, including a well-maintained, fire district-approved vegetation management plan.

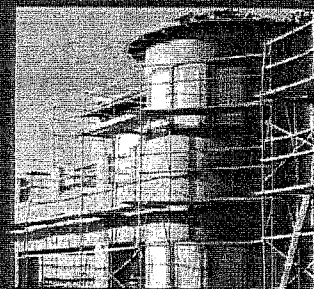
Your home is shelter-in-place because it has the following design features:

- ✓ Constructed of fire-resistant materials
- ✓ Boxed eaves
- ✓ Residential fire sprinklers
- ✓ A well-maintained, fire-resistant landscape with a minimum 100-foot defensible space surrounding all structures
- ✓ A "Class-A," non-combustible roof
- ✓ Dual pane or tempered glass windows
- ✓ Chimneys with spark arrestors containing a minimum 1/2" screening

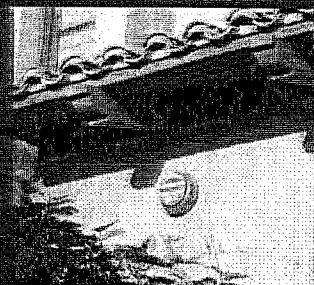
Your community, as a whole, also includes these shelter-in-place features:

- ✓ Adequate roadway and driveway widths, designed to accommodate two way traffic and large firefighting apparatus
- ✓ Adequate water supply and water flow for firefighting efforts
- ✓ Vegetation-modification zones surrounding your community

To remain a shelter-in-place community, these design qualities must be maintained year-round.



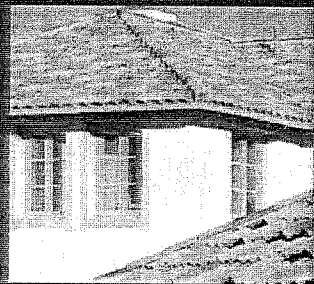
Fire-resistant construction



Residential fire sprinklers



Fire-resistant landscaping



"Class-A" roofing and dual pane windows



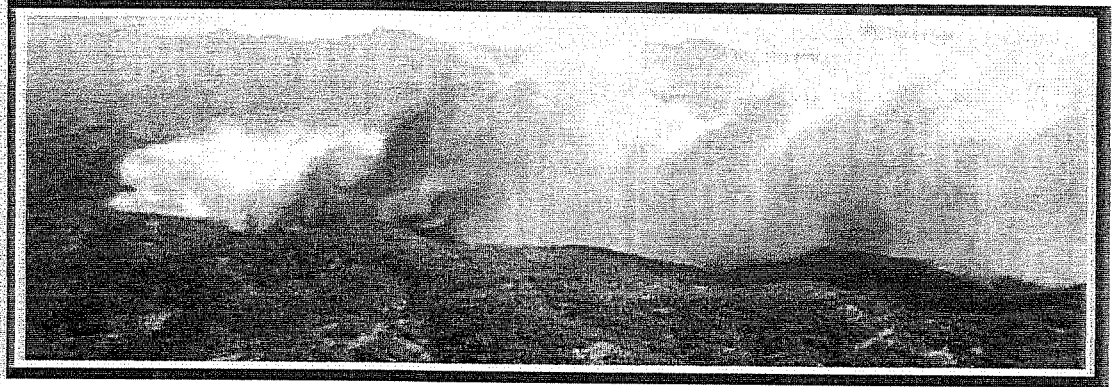
Adequate roadway widths

When Wildfire Approaches

As a wildfire nears your shelter-in-place community, you are advised to do the following:

QUICK TIP:

During a catastrophic wildfire, do not call 911 unless you have a life-threatening emergency.



- ☐ Listen for fire updates on the television or radio. Since the electricity may go out, have a battery or solar-powered television or radio on hand, with extra batteries.
- ☐ Do not attempt to pick up children from school or daycare; staff members are trained to protect your children and will institute proper emergency procedures on site.
- ☐ Bring pets inside; put livestock and horses in a secure place.
- ☐ If you must go outside, wear a long-sleeve shirt and long pants comprised of cotton or wool; never wear synthetics. To minimize smoke inhalation, cover your nose and mouth with a damp cloth.
- ☐ If time and conditions permit, move anything that can catch fire away from the exterior of your home, including: combustible lawn furniture, cloth awnings, barbecues, portable propane tanks, trash, and fire wood. Re-locate these items to the furthest point in your yard, away from your home and neighboring structures.
- ☐ Close your garage door(s). If your garage door operates on electricity, disconnect the unit and operate the door manually.
- ☐ If you have a wooden fence that connects to the exterior of your home, prevent flames from spreading from the fence to your house by propping open the gate, or removing the portion of your fence that touches your home.

roaches...

- ☐ If time and conditions permit, attach garden hoses to outdoor spigots. Place hoses so they can reach around any area of your home.
- ☐ Do not climb on your roof to wet it down; the slippery surface presents significant safety issues. Remember, your roof is already comprised of non-combustible materials designed to resist heat, embers and flames.
- ☐ Turn off all fans and air conditioning/heating units. Close all glass doors to your fireplace, and close fireplace dampers, if possible.
- ☐ Close all interior and exterior doors and windows to prevent embers from entering your home.
- ☐ Draw draperies and window coverings wide open, well past the perimeter of the window. This will prevent radiant heat from catching the window coverings on fire. Do not cover the inside of windows with foil or any other materials.
- ☐ Move interior furniture away from windows and sliding glass doors to prevent radiant heat from catching the furniture on fire.
- ☐ Stay indoors and wait for the wildfire-front to pass. Shelter in rooms at the opposite end of your home from where the fire is approaching. Stay away from the perimeter walls. *If the interior of your home catches fire and your fire sprinklers don't activate, go to one of your pre-determined safe zones.*
- ☐ Call your out-of-town emergency contact to let them know you are sheltering in place. If local phone lines go down, try using a cellular phone as an alternative, or correspond via email if possible.
- ☐ Once the fire front has passed, thoroughly check your home, yard, roof, attic, etc. for fire. Use a hose or fire extinguisher to extinguish any spot fires or smoldering embers.

Why not evacuate?

FACT: Most wildfire-related deaths occur during evacuation efforts.

Factors contributing to the high number of evacuation injuries and deaths include: heavy smoke, flying embers, panicked drivers and the sheer volume of cars and horse trailers on the road.

During past wildfires, dark smoke and last minute evacuations have caused panicked evacuees to drive off roads and crash, trapping them in the fire's path.

Traffic collisions are also common during evacuation efforts. These incidents compromise the evacuation of other residents, as well as delay firefighters from protecting homes threatened by flames.

For these reasons, it is safer for residents in shelter-in-place communities to stay inside their fire-resistive homes than risk evacuating on dangerous roadways.

Remain calm.

Stay inside your home until the wildfire-front passes.

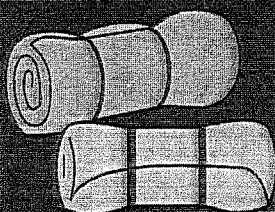




3-day water supply



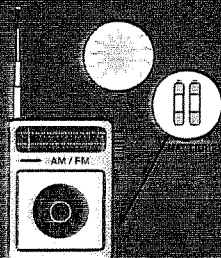
*3-day food supply,
can opener and utensils*



*Sleeping bags and
blankets*



First aid kit



*Portable radio or TV,
with extra batteries*

Your Emergency Supply Kit

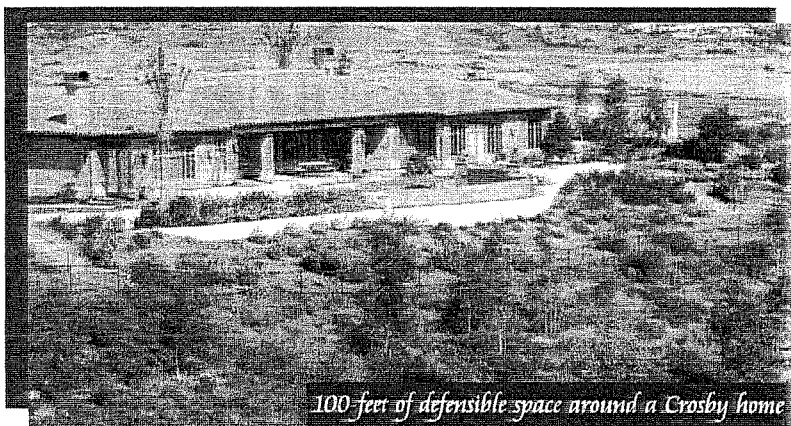
In the event food, water and electricity become unavailable during a large-scale disaster, a personal emergency supply kit will provide you the tools to survive until help arrives.

When assembling your kit, keep supplies in easy-to-carry crates or backpacks, and consider making a kit for your motor vehicle(s). Review and/or update the contents of your kit twice annually. Include the following in your emergency supply kit:

- ☐ A 3-day food supply consisting of non-perishable foods, a can opener and kitchen utensils
- ☐ A 3-day water supply consisting of one gallon of water per person, per day
- ☐ One change of clothing and shoes per person
- ☐ Enough blankets and/or a sleeping bag for each person
- ☐ A first aid kit, including family prescriptions and spare eyeglasses
- ☐ A 5-pound ABC-rated (multi-purpose) fire extinguisher
- ☐ Emergency tools and work gloves
- ☐ A battery or solar-powered radio or television with extra batteries for use if the electricity fails
- ☐ Flashlights with extra batteries
- ☐ Matches and/or a lighter. Store these in a water-proof container
- ☐ Sanitation and hygiene items, and medications; any special-care items for infants, seniors or those with disabilities
- ☐ A credit card and cash; personal identification; extra set of car and house keys
- ☐ Extra pet food, leash(es), and enough pet carriers to transport all pets
- ☐ Sunglasses and/or goggles (for high wind and blowing embers)
- ☐ Entertainment (i.e., books and games for the family)

*Keep your flashlight and portable radio with you.
Stay tuned to local news-radio stations like
KOGO AM-600 for updates.*

Remaining *Shelter-in-Place*



100 feet of defensible space around a Crosby home

*Maintenance
is the key
to keeping
your
community
fire-resistive.*

When remodeling or putting an addition on to your existing home, be sure your plans match the shelter-in-place guidelines:

- ☐ Exterior walls must be fire-resistive. No wood siding.
- ☐ Eaves must be boxed, and all vents must be screened to prevent fire embers from entering the inside of your home.
- ☐ Windows must be dual pane or tempered glass.
- ☐ Chimneys must have spark arrestors with minimum 1/2" screening.
- ☐ Residential fire sprinkler systems must be maintained.
- ☐ Roof must be comprised of Class-A, non-combustible materials like tile, slate, cement, asphalt or metal. No wood shingles.
- ☐ Wood fences should not touch the exterior of your home.
- ☐ Trellises, patio covers and other auxiliary structures must be made with non-combustible materials. Minimum timber size requirements are 4x6, and columns must be masonry and stucco, or precast concrete. The structure's covering must remain at least 50% open, or Class-A roofing is required.
- ☐ Decks should be non-combustible, or constructed of heavy timber or fire retardant-treated wood.
- ☐ Landscape MUST be fire-resistive and well-maintained:
 - ▶ Keep 100-feet of "defensible space" around your home. Trim trees and vegetation well away from the exterior of your home, rooftop, and chimney(s).
 - ▶ Replenish dead and dying vegetation with fire-resistive trees and plants; do not re-plant with flammable vegetation.
 - ▶ For more information on landscaping, and for lists of desirable and undesirable plants and trees, log on to <http://www.rsf-fire.org>.

The shelter-in-place "chain"

- ✓ CONSTRUCTION
- ✓ BOXED EAVES
- ✓ FIRE SPRINKLERS
- ✓ LANDSCAPING
- ✓ DEFENSIBLE SPACE
- ✓ WINDOWS
- ✓ ROOFING
- ✓ VENT SCREENS
- ✓ SPARK ARRESTORS
- ✓ WATER SUPPLY
- ✓ ROADWAY WIDTH

Keeping the links intact...

Homes with every link intact in the shelter-in-place chain have survived past wildfires. Break one link in the chain though, and your home, family and entire community are at risk.

Every property owner must do their part to keep the chain complete in order to remain a shelter-in-place community.





**Rancho Santa Fe
Fire Protection District**

PO Box 410 / 16936 El Fuego

Rancho Santa Fe, CA 92067-0410

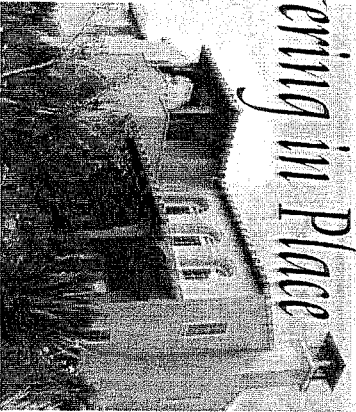
Business: (858) 756-5971

Fax: (858) 756-4799

Web: www.rsf-fire.org

Emergencies Dial 9-1-1

Sheltering in Place



during Wildfires

EXHIBIT 19

Climate changes in San Diego

HUMAN-INDUCED CLIMATE CHANGES ARE NOT JUST ABSTRACTIONS THAT WILL AFFECT FAR-OFF LANDS IN THE DISTANT FUTURE. A LOCAL EXPERT EXPLAINS WHAT IT MEANS FOR SAN DIEGO... RIGHT NOW.

by Anne S. Fege, Ph.D. and Phil Pryde, Ph.D.

Global climate change is finally real. Scientists have believed the atmospheric, oceanographic, and ecological data for at least a decade. And businesses and elected officials followed in the past year. And now each of us wonders about how our lifestyles, jobs, and special places will be affected.

We're beginning to think about how climate change will affect our ecology and economy – locally, nationally and globally. How will our climate change? What does it mean for San Diego's ecology and economy? What should we expect from our business and community leaders? What can and should we do, as individuals? How will that matter?

How will our climate change in San Diego?

- **Warmer temperatures.** There is clear evidence that the earth's average temperature has been slowly increasing for some time. Weather records show that annual average temperatures in California are already warmer than just a decade or two ago. Extreme high and low temperatures are likely to be more common, as San Diego experienced in July 2006 and January 2007.
- **More drought years.** San Diego has a Mediterranean climate characterized by winter rains, summer droughts and a pattern of large fluctuations from year to year. Most scientists predict that climate change will cause droughts to occur more often and to last longer in Southern California and in other areas with limited rainfall. But others predict more rainfall due to increased frequency of El Niño weather events. In fact, more severe droughts are predicted for the entire western U.S., which is likely to produce longer fire seasons and larger wildfire events.
- **More storms and extreme weather.** Various global climate models predict that hurricanes, storms, and other extreme weather events are likely to increase, but their complexity makes it hard to say exactly how. Santa Ana winds are arguably the most destructive weather events in San Diego, and climate models are not exact enough to predict how they will change.
- **Higher ocean levels.** Global warming will tend to melt polar ice masses, which will slowly raise ocean levels everywhere. Including San

Diego.

What will it mean for San Diego's ecology?

Climate changes may affect San Diego's natural environments in many ways. Here are just 12.

1. Some plants may disappear from San Diego. Changes in rainfall, temperature and extreme weather events are likely to affect the distribution and perhaps cause the extinction of some San Diego species. Many local plants are highly specialized and limited geographically, adapted to a narrow range of physical conditions. Many are endemic, growing only in San Diego County (or perhaps areas of southern California and the peninsula of Baja California). Multiple Species Conservation Plans may not provide the protection for endangered and threatened plants, animals, and habitats that was promised in San Diego. The development will remain, and the protected plants and animals may become extinct.

2. Animals may not find food, shelter, or breeding places. Phenology is the timing of seasonal activities of animals and plants, and some of these are changing. Records have been kept for decades (sometimes centuries) on the arrival of bird species from their winter migrations or the time that certain caterpillars emerge from their cocoons. Warmer temperatures and less rainfall will affect bird migration patterns, as well as wintering locations, food supplies, and predators. San Diego birders report that some migrating birds are arriving earlier in the spring, compared with a few decades ago.

3. Plants and animals may have nowhere to go. With gradual shifts in climate conditions, plants can grow in other sites where their seeds have dispersed and have the necessary growing conditions. Larger animals can move or fly to other locations with sufficient water, food, and shelter. With global warming, some plants and animals are shifting northward (or in the southern hemisphere, southward) or to higher elevations to habitats that more closely match their requirements. Locally, high elevation species will have no higher places to go. In San Diego, as in many other places in the world, some of the plants and animals will not be able to make these shifts because the potential habitat has been claimed by development, invaded by non-native species, or is not graced with suitable soils and other necessary growing conditions.

4. Pollutants make plants more susceptible to drought. Pollutants from vehicles drift from the roads and freeways onto parks and natural areas. As more miles are driven in more cars, more pollutants are produced. Plants adapted to our Mediterranean climate in San Diego conserve water by closing their stomates (openings similar to pores) during the day. But pollutants such as ozone and nitrous oxide change the metabolism of plants, and they keep their stomates open longer. This allows water molecules to escape, and plants dry out much more quickly.

5. Drought makes plants more susceptible to insects.

Bark beetles have always been present in our San Diego forests, and healthy trees are adapted to low populations of beetles. With more frequent drought years in the past decade, the trees are less resistant to beetle attacks, and many trees have died in the Julian, Palomar, Laguna, and Cuyamaca mountains.

6. Warmer winters increase beetle populations.

Many insects and plants have evolved together in ways that allow each to survive. For example, winter temperatures are often low enough to “knock back” insect populations at low levels. Warmer winter temperatures can increase insect survival and population levels, but the droughts and abnormally warm years that began in the 1980s have resulted in record pest outbreaks and tree dieback throughout western North America. San Diego’s forest-lovers will find large areas of forest dieback in some of their favorite Rocky Mountain vacation places.

7. Extended droughts increase the severity of wildfires.

Increased droughts are predicted for the entire western U.S., which is likely to bring longer fire seasons and larger wildfire events. Scripps Institute researcher Tony Westerling analyzed the frequency and length of large wildfires, and found that both increased in the mid-1980s. During these years, there were much higher spring temperatures, less summer precipitation, drier vegetation, and longer fire seasons. Closer to home, five years of droughts preceding the 2003 fires had drastically reduced the fuel moisture in local vegetation, contributing to the fires burning so quickly. With one ignition and extreme Santa Ana winds, 380,000 acres of shrublands and forests were burned in San Diego County in the Cedar, Otay, and Paradise Fires in 2003 – almost one-sixth of the entire county.

8. Pine trees will not return to Cuyamaca in our lifetimes. The wildfires burned 25,000 acres forests of Cuyamaca Rancho State Park so hot that trees and seedlings were completely combusted. Janet Franklin, Professor of Biology at San Diego State University, surveyed areas in Cuyamaca Rancho State Park during the first two post-fire growing seasons following the Cedar Fire. She and her graduate students found that most conifers were killed by the fire and that pine seedlings have not re-established. The oaks have re-sprouted and chaparral is growing in areas where sugar, coulter, and Jeffrey pines once stood.

9. Imported water supplies will be limited. Snow is a “reservoir” that holds moisture and releases it slowly, as the days and nights warm up in the spring. With warmer temperatures, the snow melts faster; the runoff happens more quickly in the spring; and reservoirs fill up earlier and overflow. More moisture falls as rain instead of snow. All this means that less water will be available as imported water from the Sierra Nevada and the Colorado River basin, water that San Diego depends on for 90% of its water supplies. At the same time, drier weather will increase demands for domestic landscape watering. Agricultural irrigation supplied

may become limited or more expensive, affecting the local agricultural economy. If irrigation for fuel breaks, golf courses, and other public landscaping is reduced in San Diego, these areas may become bare and eroded, weedy and highly flammable.

10. Local water supplies will be tapped out. In the backcountry, excessive groundwater pumping is already drying out local streams, habitats, and wells. Less precipitation will mean less groundwater recharge, reducing the water supply for the majority of San Diego County's land area that relies on wells. In drought years when creeks remain dry even longer, fish, frogs and other aquatic animals will find fewer places to eat and live.

11. Rising oceans will erode beaches and bluffs. Higher ocean levels will cover more of San Diego's beaches with water, and there will be much greater loss of beach sand and beach-front properties. In addition, the higher water level and loss of beach sand will permit storm waves to attack coastal bluffs more aggressively, increasing erosion and endangering bluff-top structures.

12. Local estuaries will be under water. Higher ocean levels will submerge the areas of coastal estuaries closest to the current shoreline. The rising salt water will also increase salinity and change freshwater habitats much further inland. In areas where houses or highways have been built along the estuaries, low tide may reach these property lines, and the natural estuaries - critical habitat for many of San Diego's diverse plant and animal species - will disappear.

What does it mean for San Diego's economy?

Climate change will affect all aspects of our lives. It will affect San Diego's housing, transportation, tourism, trade, and technology sectors. Climate change impacts will remind us about how we have "taken for granted" the clean air, clean water, beaches, and the other special places in San Diego - canyons, creeks, chaparral, forests, and deserts.

The global effects of pollutants were buffered for many decades by the ocean, atmosphere, and natural ecosystems. Excess, human-generated energy and chemicals were absorbed without apparent, external change until a certain level was reached that resulted in markedly warmer temperatures and changes in ocean chemistry. These global effects were also buffered by the economic and political interests of the energy, automobile, manufacturing, housing, tourism, and other industries.

For centuries, we've disposed of our wastes and industrial byproducts in the air, water, oceans and soil - at low cost or for free. We used to think these "deals" would last forever. We used to think it was Economy versus Environment. And we didn't think human activities had the power to radically change the entire earth.

But now we know better. And San Diego's business and community leaders are beginning to respond. Several local coalitions have been established to identify actions that we can each take to reduce carbon and other emissions resulting from our production and use of energy, buildings, technology and water.

Energy

The San Diego Regional Energy Office aims to "create a sustainable energy future." It offers dozens of programs for business, homeowners and governments, along with this succinct explanation:

- Energy affects all of us. Whether it's used to generate electricity or power our cars and machines, energy runs our economy and provides us with the comforts and lifestyles to which we've become accustomed.
- Yet, fossil fuels, our primary current source of energy, are being depleted at a rapid rate while carbon emissions continue to rise worldwide. With demand for energy increasing, we must seek out and implement alternative solutions. Whether it's being more efficient or switching to renewable energy sources, it will require a total commitment from everyone in the community – businesses, residents and political leaders.
- So be proactive. Make energy efficiency a priority for your organization. Reduce your power consumption during peak periods. Learn about renewable energy sources and help implement them.

Buildings

San Diego is home to an active chapter of the U.S. Green Building Council, which promotes sustainable design. The group represents over 100 organizations active in "green" building design throughout our region. In addition, there are more than 60 LEED Accredited Professionals in San Diego. LEED stands for Leadership in Energy and Environmental Design. LEED's Green Building Rating System® is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings.

Technology

Local businesses can adopt, develop and market more energy-efficient technologies. In fact, the March 2007 issue of the *Harvard Business Review* suggests that businesses do just that: measure the sources and levels of their own greenhouse gas emissions; identify potential impacts of new regulations or products, droughts, storms, etc.; and address these threats and opportunities by adapting in a way that gives them a leg up on competitors.

Water

Local water authorities are challenged to continue supplying San Diego's

growing economy with water for residential, commercial and agricultural uses. They must plan for reduced water supplies and higher costs. If water uses are rationed in the future, we may lose irrigated fuel breaks, landscapes and golf courses. Desalinization of ocean water will be considered, even with its high costs and energy requirements.

What can we do about it?

We have to start "at home." A "Climate Smart" Web page hosted by the San Diego Foundation (www.sdfoundation.org/communityimpact/environment/cs_action.html) offers a great list of ideas for personal actions we can take to combat climate change. For example, hanging laundry outside - a wonderful reminder of the free natural energy of the sun and wind. Buy a folding drying rack, hang clothes right from the washing machine, and set it on your patio or balcony.

Here are some personal actions and related links:

- Reduce landscape water requirements (visit www.bewaterwise.com).
- Install fluorescent lights.
- Invest in the most energy efficient applications.

We can also learn more about climate change. Here are a few ways to do that:

- Attend the popular lecture series at the San Diego Natural History Museum, part of the Climate Smart Initiative co-sponsored by the Museum and the San Diego Foundation, the San Diego Regional Energy Office, and Birch Aquarium at the Scripps Institution of Oceanography. These presentations have drawn 300 to 550 people every month and may continue next year.
- Visit the exhibition at the Birch Aquarium that opens in May: "Feeling the Heat: The Global Climate Challenge" (www.aquarium.ucsd.edu).
- Read what scientists are saying about global trends (www.ipcc.ch) and changes likely to occur in California (http://meteora.ucsd.edu/cap/pdf/CA_climate_Scenarios.pdf).

We can also become citizen scientists and collect data about today's plants and animals. Discouraging as it seems, we may want to document past and present ecological conditions before our climate changes further, much as historically significant properties are photographed and documented before they are destroyed. You can be a citizen scientist in many ways:

- Become a parobotanist and collect plants for the San Diego County Plant

Atlas. www.sdplantatlas.org

- Participate in the bird counts organized by the San Diego Audubon Society. www.sandiegoaudubon.org
- Train to join a San Diego Wildlife Tracking Team. www.sdttr.org
- Collect water quality data for the San Diego Citizens Water Monitoring team. www.sdcwmc.org

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We can also simply take time to enjoy our local natural environments and share with our children and grandchildren the wonders of nature and its importance in our lives. In his best-selling 2005 book, *Last Child in the Woods: Saving our Children from Nature-deficit Disorder*, local columnist Richard Louv writes, "Lacking direct experience with nature, children begin to associate it with fear and apocalypse, not joy and wonder." We can help children develop lifelong commitments to environmental and community stewardship. In turn, we can learn from them as they find the joy and wonder in nature.

Global climate change is real. It will affect us. And our response – as individuals, businesses and communities – really does matter. Let's start an honest dialogue about San Diego's future and how we will contribute to a sustainable economy and environment. 

Anne S. Fege, Ph.D., is a Botany Research Associate at the San Diego Natural History Museum, and retired Forest Supervisor, Cleveland National Forest.

Phil Pryde, Ph.D., is the Professor emeritus, Department of Geography, San Diego State University, and the editor and primary author of San Diego: An Introduction to the Region (2004).

EXHIBIT 20



US Department of the Interior
USGS Biological Resources Division

Western Ecological Research Center
Sequoia - Kings Canyon Field Station
Three Rivers, CA 93271-9700
(559) 565-3171; Fax -3177
Jon E. Keeley, Station Leader



TO: San Diego Fire Recovery Network
FROM: Jon E. Keeley, Research Scientist
RE: Report review
DATE: January 17, 2004

Thank you for sending me the report entitled "Mitigation Strategies for Reducing Wildland Fire Risks" prepared for the Board of Supervisors by the San Diego County Wildland Fire Task Force, August 13, 2003. Before using this report I believe there are some issues that you should consider.

In overview, the Wildland Fire Task Force report does not adequately reflect the full range of scientific results that are pertinent to the question of wildland fire risks and management options in San Diego County. It ignores a vast body of scientific literature bearing directly on how to effectively reduce threats of catastrophic fires in shrubland ecosystems, including numerous books and papers published in prominent scientific journals like *Science*, *Nature*, *Ecology*, *Conservation Biology*, and *Environmental Management*. This report contains an undeniable bias against work that suggests vigorous and expensive fuel manipulations in the backcountry of San Diego are not an effective means of reducing the current fire hazard situation at the urban / wildland interface. For example, within the past 5 years I have published more than 10 peer-reviewed articles in national scientific journals that presented evidence directly dealing with southern California and questioning the cost-effectiveness of broad landscape-scale prescription burning. None of these papers were cited. The only reference to this work was a fictitious bibliographic entry under a title that I have never published and with a combination of co-authors with whom I have never published any article. This citation lists Dr. E.A. Johnson, a respected ecologist and elected member of the Ecological Society of America's Board of Directors. He, like myself and others, has independently found that widespread prescription burning is neither ecologically sound nor cost effective for crown fire ecosystems such as chaparral. This fictitious citation seems a contrivance to lump together scientists who disagree with the inherent bias of this task force, namely concluding there is a need to do backcountry prescription burning and other fuel manipulations. This is particularly disturbing because my research papers, and those of others ignored in the report, have many positive suggestions for the most strategic and cost effective means of dealing with catastrophic wildfires. To ignore these ideas diverts funds away from other management activities that can make a difference.

This fictitious citation is only one of several fictitious entries in the bibliography and in part reflects a failure to respect the importance of a document such as this one, which is being used as a basis for county-wide management recommendations to reduce risks to human property and safety. Also reflective of this are quite a number of blatant errors of fact in the report. An example is illustrated on page 8 where it states that "Peng and Schoenberg... concluded that statistically, fuel was the limiting factor." However, the Peng and Schoenberg study showed that, while stands less than 20 years of age had a lower probability of burning, after that there was no significant effect of fuel age. This does not translate into the message that fuels need to be managed throughout the landscape. In a recent email communication (January 10, 2004) Dr. Schoenberg has verified that the Task Force report misinterprets his findings.

Also, the report is sloppy in its treatment of facts, and we suggest that every fact be verified before accepting it for what the report claims. Here are just a few examples: (1) on page 8, the report states that Peng and Schoenberg's work provides "a dramatic illustration of the difference between a landscape shaped with almost no fire suppression activity in Baja California compared to San Diego..."; however, Peng and Schoenberg never provided any data on

Baja and the figure ascribed to them is not theirs. (2) Peng and Schoenberg are purported to have "analyzed the Los Angeles Malibu fire regime." This is not true. (3) The acreages burned shown in Figure 1 are about 5 times smaller than what is reported by the California Division of Forestry and Fire Protection Statewide Fire History Database and as reported in the journal Science (1999; Volume 284, pages 1829-1832). Also, (4) the legend in their Figure 5 claims that this figure shows fire size, but as shown in the key embedded within the figure, what is actually depicted are 5-year age-classes of vegetation. Any apparent fire in this figure is in fact an area that could have burned by multiple different fires during a 5-year period. This mistake greatly affects any conclusions about fire size drawn from these data.

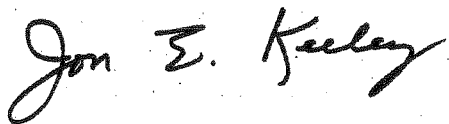
In addition to factual errors, the report makes some important conceptual mistakes that should be clarified. For example the report states, "By the early twentieth century, fire exclusion was the accepted practice." The practice was that of fire *suppression*, not exclusion, and only on certain forested landscapes has suppression actually resulted in fire exclusion. The fire history record for San Diego County shows that, despite a century of heroic efforts at putting out fires, the fire suppression policy has not even come close to fire exclusion. When fire scientists in the Western U.S. talk about fire exclusion resulting from our fire suppression policy, they are talking about landscapes where fires really have been excluded, such as many yellow pine forests, thus allowing unnatural fuel accumulation. This does apply to some high elevation coniferous forests in the county, but fire exclusion has not occurred in the foothills and coastal plain of San Diego County and this is well illustrated by their Figure 1.

I could provide a long litany of other mistakes in this report but it makes little sense to try and correct this document. It would be better to start from scratch with a more complete and balanced report. The report has an agenda: to demonstrate that widespread fuel manipulations are the only way to protect property and lives. To do this the report attempts to downplay the importance of weather to wildfire behavior. The authors' analysis is not an accurate portrayal of the issue because they have the inherent belief that only autumn Santa Ana wind-driven fires are controlled by weather and summer fires are purely controlled by fuels. This is not true. Just take for example the Pines Fire, which they portray as unaffected by weather, yet the LA Times reported "extremely low humidity, temperatures near 90 degrees, ... and [because of] gusts of wind embers skipped a mile ahead of the fire, starting new hot spots" (August 7, 2002). In general, the most catastrophic wildfires in southern California are weather-driven events, and fuel treatments when applied in the backcountry seldom stop these fires. The primary value of fuel treatments is to reduce fire intensity and increase the ability of fire fighters to approach the fire and put it out. As a result, treatments need to be strategically located where they help firefighters save homes, and the most cost-effective use of these expensive treatments is at the urban/wildland interface.

Lastly, let me suggest one of many unfortunate omissions in this report is its failure to examine the excellent US Forest Service book released in 1999 entitled "Southern California Mountains and Foothills Assessment" (General Technical Report PSW-GTR-172) by Stephenson and Calcarone. These authors thoroughly reviewed all pertinent scientific information on fire and resources in the region. While I don't necessarily agree with all of their assessments, I do heartily endorse that report as a fair and accurate study of fire issues in the region.

Attached is a brief vitae with relevant publications.

Sincerely,

A handwritten signature in black ink that reads "Jon E. Keeley". The signature is written in a cursive, flowing style.

Dr. Jon E. Keeley